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The

# COMPUTER PAPER

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\$5 (LOWER MAINLAND) EDITION AUGUST 1999 VOLUME 12 NO. 8

CANADA PUBLISHER



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**PLUS**

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### Intel® Celeron™ processor

433 MHz



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- Zoflex Internet Mouse
- 15" PB Monitor
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### Pentium® II processor

400 MHz



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- Microsoft Mouse
- 17" SVGA Monitor

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### Pentium® II processor

450 MHz



- 128 MB PC100 SDRAM
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- Zoflex 120W Subwoofer Speakers
- Microsoft Mouse
- 17" SVGA Monitor

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Chip: C433

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- 17" SVGA Monitor
- Toshiba 40X (max) CD ROM drive
- Integrated 3D Sound Pro

### Intel® Celeron™ processor

400 MHz



Chip: C400

- 64 MB PC100
- 6.4 GB Hard Drive
- Zoltrix 120Watt Speakers
- Microsoft Mouse
- 17" SVGA Monitor
- Toshiba 40X (max) CD ROM drive
- Integrated 3D Sound Pro

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### Pentium® II processor

400 MHz



Chip: C400

- 64 MB PC100 SDRAM
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Chip: 450

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500 MHz



Chip: 500

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Chip: 550

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**A.C. EDITION**  
**AUGUST 1999**



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### September 1999

Back to school  
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Technology planning

All Director: Sun, Aug. 3  
Distribution: Fri, Aug. 20

### October 1999

Opening new computer  
Adopt projects

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All Director: Sun, Aug. 30  
Distribution: Fri, Sep. 17

### November 1999

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All Director: Sun, Sept. 26  
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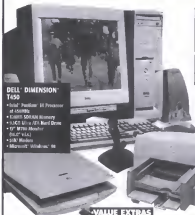


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# AZURA



**Need to know about Linux**

I am a student and I wanted to know the difference between Linux and MS. I am also a moderate computer user—which one do you recommend for a person like me? Also, could you briefly list the features of each OS? Also, does Linux come with programs like e.g., word processing, Web browser and does Linux support Windows 3.1/9x/98 software such as MS Office?

Stella Pridi

I missed my first mailing TCP almost four years ago, but for the last six months or so I have been having interest. The problem is that your coverage is almost completely Windows-centric.

I use Linux, I didn't mind your lack of Linux coverage at the old days because that market was so small. Now, I do think Linux is the wave of the year in the computer field and there is no wonder of it to the June TCP issue (that I could find), and a

minor story on a Linux security issue in the July issue.

It is difficult to get good numbers on Linux because if you do buy a CD (containing the operating system) it is legal to share it with as many friends as you like. Similar to if a company buys the CD they can share that use CD throughout their departments. From the numbers I have read, Linux (and confusion is roughly double each year with about two percent of the desktop market at

this time. It is well known of course that Linux is beginning to dominate the low-end server market with 17 percent 1998 market share and probably double that by the end of this year.

You are doing a disservice to your California readers by keeping them in the dark about Microsoft's hostile. Also, I hate to see what used to be my favorite computer magazine be so far out of it. You are missing an interesting story.

Alan M. Levin

**TCP update:** We may be happy to learn that your coverage on Linux begins this month. We will be including a regular column on Linux for those who are already familiar with this operating system, and a multi-part tutorial for beginners who want to get started in Linux.

**Speech recognition and privacy**

In your Letter from the Editor in the July 1999 issue in which you discuss the problems of speech recognition software, one item that I don't see mentioned is privacy.

Talking to a computer or having it talk back to you is all very well as a private matter. It does not work in public spaces such as open-plan offices or factory floors where others can listen in to you.

Imagine using it on an airplane flight, at times you can single a laptop away from the passenger sitting next to you. You don't want your listening in to your report on an IPO. Conversely, you don't want to listen in to someone's extraordinary email file, telephone conversations or his company's accounts. Not in a Calgary in Toronto flight, not even a Calgary-in-Edmonton multiple-jumper flight.

I am sure that voice recognition will be successful in some applications such as help to the blind, hands-free driving in private cars, and general office work. You will always be with us. Microphones have never caught on despite having been technically feasible since the 1940s.

The problem is sociological. I don't think that voice recognition will be as widespread as most think, for the same sociological reasons.

Dale Spry

**Here's that's ultimate**

While looking through your list of ultimate utilities (see column above, April issue), I noticed that you don't mention the Ultimate File Manager, OCS Navigation (which is downloadable at <http://www.ultimate.com/>). It's like Norton Commander on steroids. When you first install you find 22 sub-directories open at one time! It includes a file manager, file editor, Archive Manager (archived files are treated exactly like directories), Read Lock, Spreadsheet Calculator, Physical Disk Editor, Festival with Phonematrix, Fluffy Disk Formatter, Emulation! Diskin, The Ultimate CD Player, Disk Image Explorer, Journalist and even more! You can even have one custom tool reader, mine are just at [3038.com](http://3038.com) and [3038.com](http://3038.com).

While DOS-based utilities may seem obsolete in today's world of "Windows," I still use it every day because I haven't found any Windows-based file manager that can do half of what OCS Navigation can or half as well.

Erin Olson

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**Shipping students to test e-cash**

Microsoft's University in Louisville, Ky., will be the first university in North America to incorporate Microsoft's electronic-cash (e-cash) on its student cards. Through a partnership with the Royal Bank, students will be able to load their identification cards with e-cash then use them to buy items from reading machines, photocopies, or to use the bathroom.

Dubbed the E-Campus Project, the

University of Louisville's bank card is taking place within a dormitory where a Reader-Master e-cash trial is taking place.

Microsoft's e-cash system, which is popular at schools but less well known in North America, stores cash value on a computer chip embedded in a bank card—or in this case, a student card. Cash value can



be loaded onto the card from a bank account or an automated bank machine or a "load ATM" that plays like a telephone but which purchases are made with the card. The value of the purchase is deducted from the balance on

the card. Students may also be able to use their Microsoft cards to the extent of a \$100 limit.

**New Microsoft's Mouse goes optical**  
Microsoft Canada held a birthday party complete with mouse-shaped cake—in the form of the anniversary of the Microsoft Mouse.



On display at the event were various pieces of cake, including one introduced the Spring of 1993, which a half-month ago simulated and was used with Word 1.0.

Microsoft used the occasion to promote the third lineup of mice and keyboards, starting with the IntelliMouse Explorer, which, unlike most mice, does not use a ball to detect cursor location. The Explorer uses an optical tracking system called IntelliEye, which eliminates one of the most common sources of mouse use—the grime that accumulates on the sensor ball, slowing its performance. The bottom of the Explorer is oval.

*Continued on page 16*

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July 1999

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### Letters

*Continued from page 16*

#### May read

I was recently given a copy of your June issue. I read your review of the high-end desktop systems, and I am appalled at how you present the information on Macintosh. From reading your description in, I got the feeling that you did not even power up the machine.

If you are to be an unbiased publisher, then you need to test the machines in equal light. If your benchmark program doesn't operate on the Mac, why not at least install them, and run Mac OS 9.0.2, then Windows 98 to get an idea of the speed? (You would need to power off that thing twice in an emulation mode.) If you do have benchmarks, can you "read" the results? Open a large Photoshop file, or copy 100 MB file, then see many ways it can do so. If you plan to run Macs, then I should have a multi-platform benchmark, even some Apple-compatible benchmarks.

I noticed that all your advertising is for PC items. Are you afraid that a well-advertised PC will outperform all the clones and beat you all away? The main reason why I read the issue is if the only thing in it that is useful, it is also a very bad very power machine. It is also covering many systems, and extending many people who when the media did (and left) to make a choice of Apple.

The new G4 chip and computer point of the most powerful computers available to anyone, not just Macintosh. Unfortunately, the media only shows us Bill Gates, who only the idea of Windows from Apple for the last years.

In the future, please be unbiased, or at least point us in the way, and leave the best of your reviews.

Joe Lamm



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Continued from page 12

with a recessed optical sensor capturing nearest transmission as the mouse glides over a surface.

Microsoft marketing manager Shonda Telford said the mouse tracks on virtually any surface except glass. She also said the new tracking system captures more information per second, making the mouse more responsive and accurate.

The *Intelligence Employer* includes two additional buttons, which can be programmed to allow single-button commands for common functions like printing or saving a document. It also sports a new color scheme along with a translucent and ultrathin (and a glowing red mouse tail light). It will be available in September, with an estimated street price of \$99—\$127.

Microsoft, <http://www.intelmouse.com>

#### My Yahoo Address Book

No, this isn't a commentary on the state of one's associates, but a bonus feature added to Yahoo! Canada's "personalized services." The Yahoo! Address Book is an online contact manager that allows users to access their address book from any Internet-connected computer. Information in the address book can also be synchronized with Microsoft Outlook and Palm handheld computers.

Along with the address book, Yahoo!

Canada has also launched Yahoo! Mail, a e-mail account accessible from any Internet-connected computer. Unlike this post, Yahoo! Canada launched two other personalized tools, My Yahoo! and Yahoo! Messenger—Yahoo! Canada, <http://my.yahoo.ca/en/>

#### StatTel launches auction site

Industry analysts estimate that online time will generate US\$19 billion more activity by 2001. Capitalizing on this growth, StatTel has launched StatTel.com,



Canadian online auction service. Buyers and sellers who register at the site receive identification numbers and passwords. Sellers are charged \$5 for each item posted on the site, and a 2.5 percent commission for each item sold. Buyers pay no transaction or commission to use the service.

StatTel, <http://www.stattel.com>

#### Supermarket scanning 25 years of



Just over 25 years ago, on June 26, 1974, a Marsh Supermarket in Troy, Mich., a part of J&F Food Corp. was opened over an 18-acre site, marking the beginning of an product scanning. Idea according to announcement released by NCR Canada celebrate the 25th anniversary of what is code scanning. The company says retail scanning came to Canada two years later.

**Book Adventure also helps kids love the** The Sybian Foundation has launched a website, the Book Adventure, to help children enjoy reading and to help celebrate the 20th anniversary of Sybian Learning Centre, which has about 750 outlets across North America.

The site contains a free online program designed to help motivate young students across Canada to read. Book Adventure allows to read longer, more frequently and with greater comprehension.

Continued on page 4

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# MP3: the birth of a new music biz?



In the year since the MP3 audio file format appeared, it has simultaneously been called the best thing and the worst thing to happen to the music business.

By Keith Schoenig-Rebers

Upstart-courting artists who use the format to quickly and cheaply distribute their music into the Internet, think MP3 is the best thing. Many in the established music business, however, think it's the worst possible thing, and claim this problem is being caused by a format that allows anyone to freely distribute high-quality copies of commercial recordings. It is almost always therefore, the truth lies somewhere between these two extremes, and somewhere outside of them.

Whether MP3 is the format of a new music business legibly inside the music, what the popularity of MP3 has done is to help increase the possibility of making money selling music and music players over the Net. This may seem to be a nice business, but several firms are already testing their MP3 is going to be big, and some are already making money out of it. So what exactly is MP3? It is a file format that compresses computer audio files to about a tenth of their original size. This means that a four-to-five-minute pop song that would normally be 40 to 50 MB in size can be compressed to a mere 4 to 5 MB MP3 file—a perfect size for transmitting over the Net. And the resulting file suffers little or no loss of fidelity. Add all these factors together and you've got the sort of thing that makes most company executives cringe, but it's also made a lot of musicians and hardware manufacturers smile.

## Little laws

Musicians are embracing the possibility of distributing their songs widely and for free using MP3s. Many underground/unsigned bands have found that the file is a great place to get themselves heard, and the file is MP3.com ([www.mp3.com](http://www.mp3.com)) has become the place of distribution for these artists.

MP3.com offers free Web hosting services to bands that want to distribute their music in this format. The site now includes tens of thousands of MP3 files to anybody who wants them. It got well over 300,000 downloads yesterday, and also serves as an information base for anybody wanting to learn more about MP3 or to find out the latest MP3-related news.

Small underground bands aren't the only ones getting in on the act. As the format spreads, artists in popularity are also embracing

artists are beginning to distribute music in MP3 form, including the likes of the Rascal Flatts, Billy Joel, Perry Fessenden, Electric Blue, and more. One of its popularity MP3.com has been licensed to a combination record label and record store—which was enough to convince the mainstream and internet. One of the most popular MP3.com is currently listed 145 million in MP3.com's database as a viable source of music.

## More hardware

Electronic hardware makers are also smiling about the success of MP3—the way to the bank. Though there was still opposition by the Recording Industry Association of America (RIAA) to the release of the first portable MP3 player by Diamond Multimedia, a U.S. court ruling went recently upheld in appeals courts decided the role of such devices legal. This ruling has opened up the market, and the market place has demonstrated that there was demand in a matter of months. Diamond Multimedia sold over 150,000 units of its first portable MP3 player. More recently, Creative Labs has come out with its own portable MP3 player, called the Nomad, and it is believed that should make it highly competitive with the Rascal.

Software firms will now face increasing competition from other firms. Hardware giant Apple has plans to release the iMac, whose extra hard drive, at 340 MB, can hold considerably more than other the Rascal.

The format is also set to make waves into home music systems with the imminent release of the first MP3-compatible MP3 player. By connecting it to your stereo system, you will be able to store MP3 files on your CD player and listen to them directly, or you can listen to them on your system but the computer controls play. In either case, the player will be able to store MP3 files with the size of a computer. Looking at the MP3 format out of context of the computer-crowd and into the mainstream.

## The competition

So far it sounds like MP3 is just for home users, online distribution and electronic manufacturers, but what about mass

market? Like it or not, artists will make their money selling CDs, not MP3s. This is because in the end, the format has not proven itself as profitable. It has gained popularity and wide distribution to its own history precisely because it is free. It is also too easy for one MP3 purchaser to send her copies to anybody and everybody, further diluting the potential profits.

This is where copyright formats, such as Microsoft's Windows Media Technology v.6, come in. If a song is done in this format, the user has to get a key to "unlock" it and play it. The format and others like it do not allow for digital copies as such file can be copied by only the user who has the right key. There is a different key and the "lock" for every individual copy that is downloaded. This technology allows for a secure method for selling music online while ensuring that copies cannot be distributed.

However, one of the greatest risks to the music industry is that if a new format is successful, it has to be at least 10 times better than the existing format. The rapid rise of CDs, which almost displaced vinyl in a short time span, is a testament to this rule. In the same way, MP3 may well be the way to replacing CDs.

It will be highly problematic if any of the new alternative "second" digital formats prove to be easier to use or offer substantially better sound than the existing format. The rapid rise of CDs, which almost displaced vinyl in a short time span, is a testament to this rule. In the same way, MP3 may well be the way to replacing CDs.

It is safe to say that MP3 is just beginning to enter into its own, and that there will be many changes in the music industry in order to accommodate it. As more corporate shareholders get in on the act by selling such things as MP3 players and buying online music stores, the MP3 format becomes more fully embraced.

Will MP3 still be around five or 10 years from now? Probably it doesn't matter. Whether it is MP3 or one of its descendants, selling music online is set to become a major industry.

As Bob Dylan once sang, "The times, they are a-changin'." And that should be able to buy that time online soon. □



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# Flash

redefines  
Web  
interactivity

The moment I stumbled upon my first Flash site, I felt a paradigm shifting. My speakers began pulsing. Colorful shapes were spinning, slamming and thundering as I navigated through the interface.

## By Doug Hilly

Imagined with the mouse-over and sound-effect intermedia within cinematic screen transitions, I've clicked each button just to see how the next paragraph of text would appear. OK, it may have been a little shy on content, but here was a site that was actually fun to surf!

About a month later, on my way around to that site (<http://www.galaxy.com>), I was confronted by a strong little poster: "Due to the breathtaking design of prospective clients (showing hundreds of stories at one), I can take on as many customers like yours as you...Galaxy! OK, some portions of this quote may be a little exaggerated due to proportions of my on my part. The condensed my initial reactions about this technology not only were Flash sites exciting, engaging and fun, which anyone could plainly see, but I could see signs to learn about how marketing efforts in there.

Soon then, a multitude of companies, such as Disney, CNN and IBM, have added Flash to their mix. In 1998 alone, 17 million Flash pages (page) to new effects on these sites) were downloaded from the Web site of Flash developer Macromedia (<http://www.macromedia.com>).

As the newest release of this lightweight change of Web animation, Flash 4.0, hits the streets this summer, let's take a closer look at the features of and technology behind it.

## Flash at a glance

Flash, which became a Macromedia technology when the company acquired FutureWave in 1997, is poised to define the aesthetic of the Web to the coming generation of sites. Its influence can even be seen in print and television ad campaigns.

The Flash look is unmistakable. Unlike static HTML, the appearance of Flash movies is not restricted by tables, color palettes or resolutions. Interactivity is not limited to wrapping buttons or providing screen-curtain effects. The look of a browser window, the

Flash designer's site. Flash also enables a hybrid of television commercial-style computer graphics, and print media design. Long gone to the Internet become expandable, collapseable, and draggable. Design elements and other content can fly into type morph or slide into place. Flash allows the Web designer capabilities and creative control over the architecture and delivery of site information.

Flash further closes the gap between the traditional, static Web design and the new, television-style interactive multimedia experience.

## Flash sites resemble a hybrid of television commercial-style computer graphics and print media design.

breadth of design and functionality possibilities is constrained only by the bandwidth of your star visitors.

Often when I discuss design with people who are unfamiliar with Flash, I am relieved to explain, for a lack of a better description, that I create animated Web sites in description that is usually followed by glib-eyed expressions of incomprehension. Most often they think this involves creating cartoon characters. Some clients do request character animations, but this encompasses a more limited set of Web animation projects.

Design-to-animation better describes what

descent through in third use of word. Flash 4.0 employs both ASPM (ASP and HTML) computer to deliver streaming, CD-quality sound to your desktop. Regardless of the length to which a designer attempts to capture a certain feel for a site through visual interpretation, the essential accompaniment of a soundtrack instantly establishes a mood for the site. The impact of the site soundtrack cannot be overestimated; it is often the more with the subtle qualities of timing and pace that are almost less state sites.

The rich multimedia experience of Flash would be useless if it could not be delivered

Images being prepared in Adobe Photoshop (left) are used to build a site using Flash (below).



to your desktop. However, Flash voice library and audio compression is streaming (not, well-designed, Flash sites commonly compress to 32KB, offering the same download times as a single raster graphic on a static site. This compression makes Flash ideal to deliver to target users with slow Internet connections. Flash also enables, so your visitor is viewing and interacting with the site before the file reaches his browser.

While Flash is attributable to the information design arena, it also shows a solid punch on the content side. Online games, cartoons, comic books, interactive advertisements, movies and animation are created in Flash. It's something and making a serious deal larger to other forms of streaming media. Flash is also an ideal format for rendering the aesthetic of an internet, where bandwidth is not as much, and in creating CD-ROMs, where bandwidth is not a factor. The benefits of the computer for business, about the Internet absolutely about in these applications. The full multimedia capabilities of Flash, combining vector and raster graphics with CD-quality soundtracks enables the designers to create truly unique experiences. Flash is the tool for creating the killer apps and for any application.

## Flash is a match!

Flash is a vector-based animation programming language. Whereas raster graphics, the JPG

Continued on page 32















**Flash revolutionizes Web interactivity**

Continued from page 28

and GIF files records similar file size placed in the image versus graphics defines the pixel value of graphical objects by mathematical equations. For instance, the use of a curved line is defined by two tangents, called *handles*, and the distances and angle characteristics of the line as it veers into what is designated as a *bevel*. A collection of lines forms a shape, no matter how close the appearance of the object is approximated in a few lines of code, the file size of a vector graphic is a function of that of a raster image.

Vector graphics preserve their lines, moving edges and text are clean, crisp and anti-aliased (i.e., no jagged lines). Besides, an on-line-independent file type allows for the easy manipulation of the size, shape, color and position of objects. Therefore, they can make them more.

Objects are animated inside a timeline using keyframes. Web flash determines the rate, color, shape, opacity and position of the

object in one to thousands, then we define those same characteristics in another keyframe (this is the timeline). If we change the characteristics of the object in the subsequent keyframe, the program can be made to zoom, pan and zoom in between the starting and the ending point. This process is called *keyframing*, and with it we create the illusion of motion.

An object is animated within its layer which occupies a level of depth in the hierarchy on the work area, or stage. If we add layers above and below this layer, we can determine the visibility of moving objects within the scene. The scene, which encompasses locally to the HTML equivalent, the page, is a collection of layers of animation with objects animating along the timeline in their separate layers.

Flash scenes are composed of scenes which roughly correspond to pages of a Web site. The final act of a Flash scene is the scene transition. The designer decides how to animate the way one layout transitions into

another key object, such as logos and textual language and other design elements can enlarge, shrink, morph, slide, change color or simply fade away.

Flash movies and timelines can play on their own without interactivity but are also responsive to mouse events. It creates event buttons in other objects can trigger action transitions or other animations to occur on the stage.

Flash 4.0 takes some maximum steps to expand its interactive abilities. In this new version, it handles frames within the timeline allowing the movie to pass text variables to the server using GET and POST. Also designed to access remote data Flash supports HTML text files, which stream downloading. The movie movie within a browser or pop-up up another browser window. Flash 4.0 allows the designer to not only integrate sound, music, fonts, color, and drop-down menus, but allows complete customizations of their appearance.

Working in conjunction with Flash Connectors, query results can be posted back to the Flash scenes allowing Flash animation to link to fully textual database and e-commerce server applications.

In addition, Flash 4.0 has also adopted its own scripting-oriented domain to JavaScript. Using it, users can now able to interact with Flash elements by using the mouse and key board. Thus allowing script designers to develop games of simple to moderate complexity.

The design can also be called based on the Flash movie file three levels can be added and structured to meet to user input. From simple can play on mouse request to a critical frame specified in the timeline. It illustrates how much the user, Flash can interact with the user in a three-dimensional way. The video from performing each would the user engaging the site.

Thus interactivity with the concepts of timeline animation may be designed at the task of creating flash content. On the contrary, this legacy system is increasingly interactive and easy to use. Interactivity philosophy with the tools timeline and theory of the program can be achieved in a matter of days. To fully exploit the capabilities of Flash however, a working knowledge of some of its related technologies is recommended.

**In the corner...**

A video cloning program such as Adobe Business or Macromedia Freehand, is a handy approach to creating Flash content. The cloning tools in Flash can easily be defined. They create timelines, boxes and circles but lack the intuitiveness of professional vector programs. In vector, computer design can easily be applied to create rich, scalable scenery using Flash's pen-and-ink-style drawing tools. The free tools in Freehand and Freehand and only allow subtle precision in creating vector objects but allow you to optimize scenes to reduce shape file size as well. Flash 4.0 now supports Freehand 7.0 and Freehand 8.0 file types.

The Flash programs make the transition to modeling tool to designers wanting to create digital content to add some results that resemble the look of layout design software. Adobe's Freehand logo is a must for editing loops and applying filters to elements. Other programs like Adobe Illustrator, and Adobe are ready to integrate original Flash 4.0 exports PDF and EPS files.

On the application side, Macromedia Director writes Flash content on the fly from a database. This enables the powerful search results and data-sensitive information can demand within the Flash interface. The also allows the ability to customize appearance and content. Web Connectors that is used for the remote access outside the Flash interface to view server-generated content.

Flash is also a valuable interface design tool to designers using Macromedia Director. The sublayering using the CS2 software, Flash interface Director's native raster graphics support, providing raster graphics animation as well. Through large-scale very aspect of the Flash movie can be controlled. Flash can also control length and the Director movie to control playback and page event. Flash and Director combine seamlessly to provide maximum flexibility for CS2-Mac and Web projects.

**And in the other corner...**

In the Web design to motion field, Flash simply has no peer. HTML, CSS (Cascading Style Sheets), and JavaScript allow the designers to move objects in layers and achieve the visibility of those layers, but it lacks the ability to properly manage any of the sophisticated animation and effects that are accomplished in Flash through shape and motion tweening of key values that define those objects.

Just as there are existing options for creating interactive, animated Web content, just as there are existing options for creating static content, and then add in comparison to Flash in both file size, and efficiency and smoothness of animation. They also require complex coding, as most concerning at a coming script (JavaScript) and at "dipping off" is a starting point for the programmer.

Macromedia's in addition to Flash is its Liquid Motion technology which allows designers to create Web animations from clip art, images and professional effects. Beyond the Web design, vector design, animation, this technology allows it even photography. Its animation-style output is crude enough to discourage any designer willing to control the time and energy for designing a project the time using it.

**Limitations**

The major obstacle to the professional use of Flash lies in the limits, the program implemented, is in nearly every. Network security issues prevent many business from creating Flash content by dropping the plug-in. However, a recent study survey revealed that more than 70 percent of Web customers can already view Flash content without downloading the plug-in. The Flash plug-in currently ships with Netscape 4.04, Internet Explorer and MSN versions 4.0 and higher Windows 95, Mac OS 8.0 and higher. Additionally, CD-ROMs with 4.0 and WebTV 4.0, the plug-in requirement comes enough limits to prevent many companies from considering their entire Web presence to Flash.

Another threat in the design tool is the limitations posed by the drawing tools. For example, Flash handles object reference with, with modest alpha and gradient coloring ability. It is in lack of sketching handles the histogram of the appearance and color illustration programs. It is inadequate illustration aspects high-end users to purchase Freehand or Illustrator to achieve professional level of precision.

While Flash 4.0 animation can create CD-ROMs through pre-rendering frame-

Continued on page 38

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# Digital music distribution's coming of age

By Sean Conithers

Streamline was in the major record label, you can have record executives' doors knocking together in fear in the age of digital music distribution, damn.

Record companies have always made a little business to keep its eye on duplication of copyrighted material (swindled by their artists and to crack down on pirate offenders). When music cassette tapes were introduced in the 1960s, they were a major threat.

After all, the ability of audiophiles to easily duplicate all of their favorite music on the comfort of their own (lower) would cut into the profits of the record companies and drive them out of business.

Just a little later that didn't happen. Some

even argue that "samplers" were responsible for new sales, as the happy "banned" would not cut and they still showed from any artists who were heavy investors from those record labels.

A company called MP3.com is one of the latest to make use of that system, and has since under the for its use of the MP3 format for music redistribution. Record companies are particularly wary about the MP3 recording process, which uses MP3 compression to reduce non-CD quality audio files to a fraction of their uncompressed size. That allows a user to compress a 40 MB file down to a more manageable 3 or 4 MB (usually less) in the death of the record company.

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help out so fast. Part of the fun of MP3 is the easy redistribution of high-quality audio, and for download that the only one licensed in its potential in their audio and forward-thinking record companies have come to MP3.com to have samples of their work redistributed to anyone willing to download a few megabytes in this way (even like MP3.com have become a bit like the old radio in the 1960s. Because it's free and you're willing to download a variety of things, you never quite know what's going to come up next—it could be anything from electronic music to a local band).

Some artists, like Trans-Siberian Orchestra (www.transsiberian.com), have made up their catalogues available for download on MP3.com with the system to purchase the CD version of the album. MP3.com also offers a new CD of "103 of the best songs you've never heard", contains 103 MP3 audio files (the book includes a CD as well as a video from the audiobook). It also has the best of the best album.

When it comes to making record companies nervous about the future of music redistribution, the hip-hop group Public Enemy has opened the music over barriers in that its first foray into the digital world called this year making some of its music available on MP3 format on its Web site (http://www.publicenemy.com). The group's record label (Interscope) was not amused and forced the group to remove the files. The group answered back by making its next album, *There's a Power Group On*, downloadable to its website via the Web site, and later available to your own CD burning via the *Remix* CD (http://www.thereisapowergroup.com). Does this spell the end for commercial music?

Continued on page 16



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**Flash redeems interactivity***Continued from page 32*

by frame drawing, the third dimension is not supported in Flash. Floating objects around the Z-axis is possible only through work-arounds, and Flash 4.0 does not yet import animations in vector format from any of the leading 3D modeling programs available.

As interactivity matures and Flash capabilities improve, the focus of design businesses has shifted from the end user's

screen speed to his processor speed. The fluency of Flash animations is based on those who take the speed that downloading images on the screen is achieved. Webcraze's bandwidth results at 30 frames per second, leading browsers per second are adequate to provide the illusion of motion. The frame rate at which your computer refreshes its screen is dependent on the processor speed, video card and display settings of your system. Consequently, a full-screen Flash anima-

tion that runs smoothly on a 450 mhz Pentium III-based system may look like a chugger on a machine with a 166 mhz processor. This is a phenomenon we wish to be chugging and to avoid, it designers must document a safety note for their animation. The amount of chugging in an animation is an answer depending on the amount of simultaneous motion on screen at any point in time and the complexity and size of the objects in motion. This limiting factor is

the sole barrier in Flash achieving the last step of design-to-motion—interactive Web content delivered with the dynamics of television and cinema. Flash designers wait in the wings and watch, with eager anticipation, the leaps and bounds that the hardware industry is making in a mere few days.

Flash is a technology that has quickly met goals its own making. Acquired in January 1997, at Macromedia's (NASDAQ: MMS) and its fledgling FutureLab technology, Flash was deemed to be a competitor to all current GIFs. By modeling directly with development workbooks, Macromedia has dropped a multimillion blockbuster on the industry that generates new faces with each release. Flash 4.0 is a great evolution that Macromedia intends to stay ahead of the dynamic Web position in the future. □

Developing a design portfolio at the User Media Group (UMG) has been one Macromedia's biggest hits of the day and participants in the ongoing development of Flash. View is portfolio online at <http://www.usermedia.com>.

**Digital media distribution's coming***Continued from page 32*

music distribution? Not likely at least not yet. And Flash, the colossus of the web and local Web/Flash Networks, is a proponent of switching to completely digital distribution, but is so yet uncertain that MP3 is the way to go (you can read his "declaration" on the subject at <http://www.usermedia.com>). Other labels are still holding their cards close to their chest.

And at present, most consumers aren't quite willing to give up having a physical product in their hands when they purchase an album, giving consumers \$8 and then downloading an album is still a bit too abstract.

With the way people are taking to the MP3 as a method of sampling new music, however, it seems to be only a matter of time before the way to make full digital distribution, whether it's just for individual songs or full albums. □

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## Kodak adds GPS to digital camera

KODAK (NYSE:K) now uses digital cameras from Kodak Japan Ltd. to set its latest marketing campaign that moved online a year ago. The idea is to show where a person was taken. For Kodak's new GPS GPS camera, which is set to hit Japanese stores, the company has incorporated a module for the global positioning system (GPS)—the satellite-based positioning system used by car navigation systems.

The result is a less than elegant package—the GPS module and antenna is about as large as the camera—but then it likely is similar little to personal users, who are expected to be curious, car engineers and other business users.

Other features include a high quality 1.8 million pixel CCD image pickup, its optical and digital zoom and the ability to record up to 40 seconds of audio with each image. The camera will sell for approximately US\$1,845. The company that now announces where the camera would become available in North America.



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## Digital video recorders to hit market

RESONANCE, Max 900—Digital video recorders, with their built-in digital programming features and memory capabilities, are poised to do well when they become available in the commercial consumer electronics market this fall, according to some market research firms.

Known as DVRs, digital video recorders are a sort of enhanced alternative to VCRs and DVD players, allowing viewers to pause individualized programming services and a hard drive instead of a cassette. Say a television viewer gets a phone call while watching a football game. He can pause taping the game immediately by pressing a button on the DVR. When he gets off the phone, he can resume watching the game right away without having to wait for the spot to end and record a tape. DVRs also have the capability to record shows and automatically save the programming if the time window of the show is changed.

Market research firm International Data Corp. (IDC) predicts that digital video recorders will explode once the market when they debut in the fall. Jaffay Networks DVRs and Microsoft all have developed technology for digital video recorders. Microsoft plans to start shipping its Internet data player, a high-end setup box with limited DVR capabilities, this summer. Home call, Futaba and Philips Consumer Electronics plan to debut products using Jaffay and TTA technology, respectively, in the fall, IDC said.

IDC reports that prices for DVRs are currently at US\$499 and US\$399, depending on the storage capacity, but the research company expects the prices for DVRs to drop significantly once they hit the retail market. □

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2017 年 12 月 31 日 2017 年 12 月 31 日



Year	Country	Population (millions)	Urban population (millions)	Urban population (%)	Population density (per sq km)	Population density (per sq mile)
1950	USA	150.7	95.0	63.0	26.3	67.8
1950	USSR	162.0	50.0	31.0	13.0	33.5
1950	China	554.6	10.0	1.8	150.0	390.0
1950	India	361.0	10.0	2.8	170.0	440.0
1950	Japan	93.0	70.0	75.0	330.0	850.0
1950	France	45.0	30.0	67.0	200.0	520.0
1950	Germany	68.0	45.0	66.0	240.0	620.0
1950	Italy	45.0	25.0	56.0	200.0	520.0
1950	UK	50.0	35.0	70.0	260.0	670.0

Company	Stock	Price	Dividend	Payout
AT&T	NYSE	25	\$0.50	2.0%
IBM	NYSE	100	\$2.00	2.0%
Microsoft	NASDAQ	40	\$0.50	1.25%
Oracle	NYSE	25	\$0.50	2.0%
SAP	NYSE	25	\$0.50	2.0%
Sun	NYSE	25	\$0.50	2.0%
Verizon	NYSE	25	\$0.50	2.0%
Wells Fargo	NYSE	25	\$0.50	2.0%
Yahoo	NYSE	25	\$0.50	2.0%
Amazon	NYSE	25	\$0.50	2.0%
Google	NYSE	25	\$0.50	2.0%
Facebook	NYSE	25	\$0.50	2.0%
Twitter	NYSE	25	\$0.50	2.0%
LinkedIn	NYSE	25	\$0.50	2.0%
Slack	NYSE	25	\$0.50	2.0%
Zoom	NYSE	25	\$0.50	2.0%
Dropbox	NYSE	25	\$0.50	2.0%
Box	NYSE	25	\$0.50	2.0%
OneDrive	NYSE	25	\$0.50	2.0%
Google Drive	NYSE	25	\$0.50	2.0%
Microsoft OneDrive	NYSE	25	\$0.50	2.0%
Apple iCloud	NYSE	25	\$0.50	2.0%
Amazon Drive	NYSE	25	\$0.50	2.0%
Google Photos	NYSE	25	\$0.50	2.0%
Microsoft Photos	NYSE	25	\$0.50	2.0%
Apple Photos	NYSE	25	\$0.50	2.0%
Amazon Photos	NYSE	25	\$0.50	2.0%
Google Photos	NYSE	25	\$0.50	2.0%
Microsoft Photos	NYSE	25	\$0.50	2.0%
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Google Photos	NYSE	25	\$0.50	2.0%
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Apple Photos	NYSE	25	\$0.50	2.0%
Amazon Photos	NYSE	25	\$0.50	2.0%
Google Photos	NYSE	25	\$0.50	2.0%
Microsoft Photos	NYSE	25	\$0.50	2.0%
Apple Photos	NYSE	25	\$0.50	2.0%
Amazon Photos	NYSE	25		



# Easy 3D with Canoma

By Nathan Fogel

**C**anoma, a new product from MicroStation, gives you the ability to quickly create realistic 3D models from scanned analog or digital photographs.

## Canoma 1.0

From MicroStation  
http://www.bentley.com/usa  
for Windows or Macintosh  
Suggested retail price: \$99.00 (posted on CDROM)

As MicroStation experienced its second birthday (3D), Canoma turns 3D object creation on its ear. Normally, to create a 3D object, you start with primitive elements to create the form, then wrap the form with an appropriate texture to achieve the effect you want. With Canoma, you start with the texture and manipulate the 3D form.

Specifically, with Canoma, you start with a digital image—a picture of a building, for example—and using it as a background, you "map" various objects to elements on the photograph. Once the objects are placed into place, Canoma uses that information to create a 3D model that is then mapped with the pixels from your photograph. To use Canoma, beyond 3D knowledge is useful, but not absolutely necessary.

## The main working window

In Canoma there are no floating palettes. All the features are integrated into the window that covers the entire screen. At the top left is the 3D image. Below that displays thumbnails of images used to your project. At the top center is the Viewing Window, from which you can choose Isotopic, Plan, Zoom, Pan, etc. At the bottom of the Canoma window are the Canoma and navigation tabs. Under the Canoma tab there is a selection of primitives you can choose for your scene—box, pyramid, sphere, cone, etc.

On the bottom left are the camera controls, which are easily identical to those and functions to those in Bryce for anyone familiar with that 3D program. Canoma doesn't include a built-in editor; you make the camera in any direction. Other options are looking, field of view and the ability to zoom objects directly in the scene by clicking and dragging or by using the Control key to maintain zoom while dragging. For example, drag up to move rightward, drag left to move left or use the Control key, a mouse click and drag up to move straight up and so on.

Canoma will import a variety of 3D image formats including PEG, TIF, EPS, GIF, PNG, BMP and PCX. Canoma models can be exported to IFF, OBJ, PLY, VRML, MTD, IFF, OBJ, PLY, IFCM and 3DS file formats.

## Success lies in the painting

When placing an object in the background, it's a good idea to set up some easy shapes



Start and stop: The white buildings are square shapes.



White textures created and before any coloring.

first, then check the perspective. It's a good idea to set up some easy shapes, then place the texture on them. To place a texture you cannot see the back of the object or the edges of the object to define the shape.

Placing cameras around takes practice, but if you don't get it right when you're in the middle of the scene, you can use the camera tool to simply move the camera and start again. Note that when placing an object, it is not just all white as yellow if the camera is complicated, you can create the color. On the bottom, which also has a window, you can see the one you are working on.

When building objects on top of one another, use the black and white tools. Under the Canoma tab, before selecting, another primitive. The blue to show objects, zoom in closely to view the texture, its position and click the camera in the View window. You can also speed up working by dragging camera shapes.

## Working features

When placing an object in the background, Canoma can map textures onto the sides of the object, but not on the back or the front glass behind the object. To map textures, you can click on a background. One way of doing it is to use a second photograph, taken from the other side of the object, which can be added to the scene.

In its help upon completion, you can use Canoma to make textures. This function reads textures from other parts of the object and maps the texture into the background. In doing this, you have a choice between quick or quality images. Quick textures are good for previewing, while quality textures allow the changes in brightness between photographs, which can appear as noise. It also fills in white

space where there is no image information. Quality textures take longer to apply, but look better.

When you're finished mapping the photographs to your object, your scene might need some finishing touches. You can open the editing palette that shows the Canoma interface to create your textures.

## Not true animation

In Canoma, you can create motion where the camera moves into the

model, moves around it, or flies above it. However, Canoma is not meant to be a full 3D animation program. For that you will have to use 3D programs like 3ds Max or 3ds Max 4.0. Lightwave and others. Canoma's and others are output as QuickTime movies or as sets of still images.

## Use the ladder poles

To create a 3D scene, you have to photograph an object from different angles, which may not be easy. For example, if you are building on a hill using a photograph of a building, you will need to create the perspective when you take a second picture on the other side. If there is no hill on the other side, you might have to use a crane or a helicopter to get to the same direction. That can get expensive and complicated. The challenge is to find a perspective that works from all sides of the object. However, the immediate start

moment. For example, taking many shots of a building might make the job difficult.

A photographer's studio on the other hand, allows you a greater degree of control over the scene. Angles and measurements can be mapped out fairly accurately and objects move precisely. Photographers Canoma could be effectively used to create 3D models of smaller, individual objects for an online catalog. For example, other applications include interior and packaging design and game development.

## Advanced modeling tips

Here are some techniques to simplify your modeling using Canoma:

- Add positions to establish perspective.
- Duplicate objects with the same dimensions.
- Add larger objects such as a box for more accurate perspective and more information. This can replace the box later with a more defined shape if required.

## File resolution tips

While you can save a variety of image files, Canoma depends on the original quality of the images that you use in the many 3D programs. If you want high quality output, the original images need to be high resolution.

## Summary

While Canoma can generate good results, it has its limitations. The images it is not designed for modeling cars, people, or for other. Programs such as Bryce 4, 3ds Max 4, 3ds Max 4, Lightwave and others are more suitable for these tasks.

Canoma was designed for individuals who want to create complex 3D images without having to go through an expensive learning curve—and this is done very well. It



An object is being "colored" in the background image.







# RIAA suit against MP3 player fails

**PROBATION.** Cited 1998-4 U.S. federal appeals court ruled that a device that plays music recorded and distributed via computer and the Internet is the MP3 format does not fall within the jurisdiction of the nation's anti-piracy laws.

On June 15, the 11th U.S. Circuit Court of Appeals in San Francisco found that the Rio MP3X device manufactured by Diamond Multimedia, does not qualify as a "digital audio recording device" and was not subject to the 1992 Audio Home Recording Act.

Judge District F. Giffenbaum said the fast-changing world of Internet music distribution was built on new computer technologies that do not fit neatly into existing law for certain types of consumer audio recording devices.

A suit was filed by the Recording Industry Association of America (RIAA). It claims ownership of the bulk of the sales. A lower court rejected the request, which led to the second appeal in San Francisco.

The recording industry group argued that the Rio and Internet MP3 music files is a major threat to its members' intellectual property rights. "We filed the lawsuit because we believed piracy via the Internet threatens the development of a legitimate marketplace for music, a marketplace that consumers want," said the RIAA, in a statement.

MP3 is now gaining popularity as a music distribution system that allows artists to sell to consumers via the Internet. The RIAA was concerned that, as well as legitimate use as a playback device, MP3 and products like the Rio will not encourage illegal copying and rapid distribution of music files over the Internet.

The court noted that the Rio's operation facilitates the personal use of music—less personal use than the act is designed to protect.

Diamond Multimedia said it was shocked with the ruling. "Because the Rio cannot make copies from transmissions on the Internet and create music such as CDs and tapes, but instead can make copies only from a computer hard drive, it is not a digital audio recording device," said the company.

Commenting on the ruling, the U.S.-based International Technology Industry Council (ITIC) said it was also pleased with the ruling, adding that it felt that "technical constraints would inhibit the rapid growth that has taken place in this industry where patents are constantly changing and devices are used for a number of different purposes."

The RIAA said it was disappointed with the result but claimed that collaborative industry efforts had already weakened the strength of the RIAA lawsuit.

"The technology and music industries have already come together to reformulate our values. One the Internet Digital Music Initiative (IDMI), to create a secure environment in which consumers can access the music they love in new ways," said the RIAA.

The IDMI was established by the RIAA, major labels like Universal, EMI, Sony and Time Warner, in order to protect the record companies' copyrights on the Web.

"The ruling opens a host of new opportunities for us," said David Watkins, president of RealOne, Diamond Multimedia's Internet music subsidiary. He added that the company shared the RIAA's concerns about piracy and protecting the rights of content creators. He said, Diamond is participating in the IDMI with the RIAA.

"To target content providers begins to discriminate digital audio content, eventually becoming a critical component of delivery that we are addressing," said Watkins. □

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# Web stores told to focus on loyalty

Only 1.6 percent of the 50 Web sites studied sent followup marketing offers to customers who had made purchases in the last 30 days

1491 140703. Call (408) 750-4000. Top e-commerce sites are losing customers at an average rate of 40 percent every six weeks because they are concentrating on building profits instead of establishing loyalty, a new study claims.

Labeling e-commerce as an online version of a vending machine, the marketing firm Rubix Inc. found that only 1.6 percent of the 50 Web sites studied sent followup marketing offers to customers who had made purchases in the last 30 days.

"Of those 16 percent, only half of the responses were personalized and nearly half failed to ask the customers if they would like more information on related products or view the study found.

In conducting the study, Rubix asked 50 people to buy one item from 50 "leading" e-commerce sites. The company returned the names of all 50 sites, but refused to list specific segments to specific companies.

One of the company's clients, Gap.com, was included in the study. The others included sites for Amazon.com, CNN.com, eBay, Gap Gateway, IBM, Lands End, Microsoft, Office Depot, Omaha Steaks, Payless Planet, Inc., Sears Roebuck, Starbucks, Wal-Mart, Victoria's Secret, and Zappos.com.

The study found that sites providing better, faster and better personalized service compared to managing profits designed to gain loyalty and loyalty.

## Security information service

1491 140703. Call (408) 750-4000. Security Information Service (SIS) is a pilot project of The Center for Internet Security (CIS) to provide a specialized information service to disseminate important research findings related to internet security and web, being. The initiative aims to deliver to its clients the most current and reliable security news available in a general audience and to researchers and professionals from different disciplines, and to make it easier to identify key and news in research.

For more information, visit [www.cisecurity.org](http://www.cisecurity.org)

"This could be due to the fact that these e-commerce sites are back sites and much larger than the ones you, which may limit their ability to interact with customers on a one-to-one basis," Rubix's research concluded.

Customers seeking information from the sites found it difficult for the most part to get

answers to their questions such as "Which model should I buy?" the study found.

Very few of the sites studied sent out by the researchers email newsletters, including sites that provided a time frame for a response.

Rubix also found many examples of mis-lingering.

## ITU ratifies full range of ADSL technologies

GENEVA, Switzerland (408) 750-4000. Digital subscriber line (DSL) technology may have been riding out faster than anyone could have forecast in the last year but it was still technology in its infancy.

Now it has stepped beyond the testing stage, with formal ratification of all ADSL speeds and standards by the International Telecommunications Union (ITU).

While the ITU gave the ratification thumbs up to the G.fast ADSL, proposed to date, many telecommunications carriers have been wary of investing in new line plant because of the standards issue.

Now that the ITU has ratified all of the industry's proposals, that limitation is no longer an issue. The ITU says it expects to see more deployments of the technology than ever, now it has approved the system and its standards.

For many, chairman of ITU Study Group 15, the ITU committee that has been looking at ADSL, voice and systems based on the ITU-T proposals (now studies) are being deployed by carriers to provide affordable access to Internet, telephony, distance learning, and multimedia services.

"These services provide the rapid need of telecommunications customers for Internet access to multimedia information, and the approval today is well-timed for telecommunications and computer equipment vendors, service providers and network operators alike," he said.

Very well as to say that the ITU's approval is also well-timed because many companies are now introducing systems and services on a large scale will be based upon the world standards for ADSL.

Very well the approved ADSL recommendations include a set

of coordinated specifications for compatible systems that operate over a range of bit-rates from less than 1 Mbps to more than 7 Mbps.

The ITU had previously given a preliminary green light to the use of ADSL proposed standards for October last year. Since then, many carriers, most notably in the U.S., have started deploying ADSL services.

The real key to the ratification by the ITU will probably not affect these early deployments. Instead it will allow some other types of carriers that use vendors' ADSL, like such as an ADSL "router," will continue with some for vendors' systems, such as a DSL telephone switch.

Specifically, the ITU approval has now been given to ADSL transmissions at rates up to about 7 Mbps with the use of a line to split data from voice-band signals. (G.fast 1)

In addition, approvals have been given for ADSL transmission at rates up to 1.5 Mbps with a simplified service installation and reduced maintenance. The ITU says that this typically avoids the need to install new wire as a splitting filter in the customer premises. (G.fast 2)

Other approvals from the ITU include ratification for the needed for DSL systems to negotiate mutually supported operating modes. (G.fast 3) the reference architecture for ADSL systems. (G.fast 4) and methods for ADSL systems. (G.fast 5), and the main systems of ADSL systems. (G.fast 6)

Very well that, thanks to the ITU's ratification of these standards, most carriers now begin to develop standards for their ADSL services, as well as increasing the scale back the use of the technology. (2)

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Authors: R. D. Hays - R. D. Hays,  
Edward R. Hays - R. D. Hays

1. **Figure 1: A line graph showing the relationship between the number of hours spent studying and the score on a test. The x-axis is labeled 'Hours Studied' and ranges from 0 to 10. The y-axis is labeled 'Test Score' and ranges from 60 to 100. The data points are: (0, 60), (1, 65), (2, 70), (3, 75), (4, 80), (5, 85), (6, 90), (7, 95), (8, 100). The line shows a positive linear relationship.**

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• **Week 10:**  
(Monday to Thursday)

Figure 1 consists of five bar charts, labeled (a) through (e), each representing a different demographic variable. The x-axis for all charts lists six age groups: 18-24, 25-34, 35-44, 45-54, 55-64, and 65+. The y-axis represents the percentage of respondents, ranging from 0 to 100. The bars are color-coded: 18-24 (light blue), 25-34 (medium blue), 35-44 (dark blue), 45-54 (light green), 55-64 (medium green), and 65+ (dark green).

- (a) Gender: The 25-34 age group has the highest percentage (~45%), followed by 18-24 (~35%) and 35-44 (~25%).
- (b) Education: The 25-34 age group has the highest percentage (~45%), followed by 18-24 (~35%) and 35-44 (~25%).
- (c) Income: The 25-34 age group has the highest percentage (~45%), followed by 18-24 (~35%) and 35-44 (~25%).
- (d) Employment: The 25-34 age group has the highest percentage (~45%), followed by 18-24 (~35%) and 35-44 (~25%).
- (e) Marital Status: The 25-34 age group has the highest percentage (~45%), followed by 18-24 (~35%) and 35-44 (~25%).

- [illegible]

**Abstract:** Technology assessment is essential to develop long-term R&D plans congruent with the U.S. nation's sustained capabilities objectives. This case study meeting strategies recommended as part of technology planning (technology, R&D, innovation, and IP) opportunities.

















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# Monitoring the situation

*TCP Lab peers into 17-inch displays*

**At about this time last year, we looked at monitors and concluded that 17-inch models were poised to dominate the marketplace. Judging by the candidates we received for this year's report, it looks like they have succeeded**

By Sean Connolly

**T**he 17-inch monitor used to be preferred by graphics professionals, but they're now workhorses on 19- and 20-inch displays. As more larger monitors become available, the price of smaller displays on desktops, which makes more sense to install in 17-inch displays, which is how drivers prefer them, more desirable.

Using a 17-inch monitor for use as a home has advantages and disadvantages. On the positive side, the larger display means higher screen resolution, which in turn means you can display more information on the screen at a size that's still easy to read. When of smaller monitors have been likely to be used as the monitor with screen resolutions of 1024x600 or 1024x768. Many 17-inch monitors can easily display resolutions of 1,280x800 or 1,280x1,024, and some will even handle 1,600x1,200 (24" case), the ability to display these resolutions also depends on the capabilities of your video card.

This higher resolution can be a pain for the Internet user, allowing them to open a web window on one side of the screen, and the information with the web browser on the other side of the screen, and chat with friends using ICQ or another program. The multitasking user (myself included), the screen screen resolution provided on a 17-inch monitor can be a big advantage.

The downside, of course, is the larger size of the monitor itself. To accommodate the larger picture tube, the outer casing of the monitor has to be much bigger as well, taking up more of the user's desktop. Although desktop monitors can be helpful in reducing the time to back the monitor, 17-inch monitors are still wider than 19- and 20-inch displays. This can be problematic when space is tight. At 17 inches, monitors can also be quite heavy with many costing the 20 kg (44 lb) mark.

## Where's the testing knob?

If you're replacing an older monitor, this may be the last time you run across the new

digital content. When older monitors had a series of knobs to individually control contrast, etc., newer monitors have all of these controls bundled up into a single on-screen display (OSD).

In addition to the familiar controls, OSDs add a number of other image-optimization capabilities, including correction for pin-point and image distortion, and image rotation. OSDs usually do some corrections too but some advanced image controls like beam convergence, color saturation and focus allow adjustment settings.

## Thank letters

One of the common concerns about product is whether they can handle various of electromagnetic and radio-frequency energy (EMR being conditioned to not all too close to the television, it can be surprising to all the things most factors away from a computer screen). Unless some monitors are not very low, as they are in well-shielded that radiation, by very minor levels.

Over the years, EMC testing method has been designed a number of safety standards for monitor manufacturing, starting with MIL-STD, and the subsequent MIL-STD, and then the TCO standard has been introduced with different levels of safety. The TCO was first introduced in 1992 and revised in 1995 and again in 1998. At present, the TCO99 standard represents one of the strictest and most standards available.

## Decoding monitor terms

**• Aperture grille:** This type of display uses a number of "grille" lines running along the length of the cathode ray tube (CRT) to direct the display beam to the proper area on the screen. Aperture grille technology comes in a few branded versions, including Twain (owned by Sony) and DiamondVision (owned by Mitsubishi). All of these monitors are two-diagonal wires on both the outer frame to place and then when they are up in their horizontal line on the display. Although they are usually fairly reliable, some people may find these interruptions in the display disap-

ing. For example, if you are using a computer-aided drafting program, the display wire shadow might be confused with one of the horizontal lines in your drawing. The primary advantage of aperture grille is the color ratio of the display.

**• Shadow mask:** These monitors use a pre-bonded vacuum glass (usually made of a material called steel) to guide the electron beam to the phosphor on the screen. This technology is generally cheaper than aperture grille, and therefore a cheaper display, although this comes at the expense of color richness.

**• Refresh rate:** Each monitor makes the display by shooting three color beams (red, blue and green) in a sequential pattern of phosphor on the inside of the tube. Each beam must travel in horizontal steps from the top left to the bottom right corner of the screen, and then start again at the top. The refresh rate indicates the number of times each beam can cover the screen in a second. A rate of 60 Hertz (Hz) would indicate that each beam could cover the screen 60 times a second.

**• Flicker:** This is generated when the phosphor on the inside of the screen fades at intervals before the next pass of the video beam lights it up again. Generally, flicker is more noticeable at lower refresh rates.

**• Dot pitch:** This is a measurement of how tightly packed the phosphor on the inside of the CRT. Each pixel element on the screen contains a patch of red, a patch of blue, and a patch of green phosphor. A dot pitch of .25 mm would indicate a distance of a quarter of a millimeter between patches. The lower the number, the closer together the patches, and the higher the resolution potential of the monitor.

**• Heat:** This is generated when a fairly dense pattern combines with the pattern of the phosphor on the screen, generating an interference pattern on the display. This interference causes heat, display. Continued on page 48

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1995	2,000	200
1996	2,200	220
1997	2,400	240
1998	2,600	260
1999	2,800	280
2000	3,000	300
2001	3,200	320
2002	3,400	340
2003	3,600	360
2004	3,800	380
2005	4,000	400
2006	4,200	420
2007	4,400	440
2008	4,600	460
2009	4,800	480
2010	5,000	500
2011	5,200	520
2012	5,400	540
2013	5,600	560
2014	5,800	580
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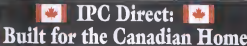
<sup>2</sup> For details, see the *Journal of the American Statistical Association*, 1994, 89, 1169.



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1. *Journal of the American Medical Association*, 1998; 279: 1001-1005.  
 2. *Journal of the American Medical Association*, 1998; 279: 1006-1010.  
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**Monitoring the situation**

Continued from page 240

After all, it works with PCs and PCs use. The monitor sits atop a slim-legged stand, so it actually stands quite a bit taller than the other monitors this month, which may be a problem for users with tight space.

The Studio Display is not only for most stand users, but the DiamondPro display makes an excellent choice for people doing high-end, multimedia work, no matter what platform they are using.

**Apnea T786**

Suggested retail price: \$475

- Screen type: shadow mask
- Dot pitch: 32 mm
- The monitor achieved a refresh rate of 100 Hz at 1,000x768 and 75 Hz at 1,000x1,000. This was sufficient for all both-resolution test up enough to be noticeable.
- Screen focus was quite good at 1,000x1,000. However, at 1,000x768, a slight focus issue was visible and there were some minor problems with focus sharpness on test charts.
- Black was measured at 1.00x10<sup>-3</sup>, but became more pronounced at 1,000x1,000.
- Minor juddering was noticeable during screen refresh rate testing.
- The OSD controls take a lot of getting used to.

Aimed at professionals, the T786 was an attractive price for the 75-inch dot pitch and good refresh rates make the Apnea an attractive choice. For users content to keep the monitor in lower resolutions, it should deliver the goods.

quite well, although you'll need high-quality, if higher-resolution test, higher than what ideal. On general-purpose use, it'd be safe to go good choice. (Thanks to Intelnet Design for the loan of a card to evaluate.)

**CyberVision C72**

Suggested retail price: \$280

- Screen type: shadow mask
- Dot pitch: 32 mm
- The C72 is capable of 60 Hz refresh rate at 1,000x1,000, and 60 Hz at 1,000x768.
- At 60 Hz, the visible area is rather large of the characteristics.
- The point quality is good, with very little blur and noticeable movement.
- CyberVision was excellent at both resolutions.
- The OSD does a lot of things, but the quality is good, having been to see the buttons like a bit of work.

This model was featured in our roundup back in August of 1998, and it still stands up well. The picture quality is good, and there's little in the way of flicker or noise. A few more years ago, the monitor's picture quality is good enough to compare with the highest-quality models.

The biggest problem you may have with the C72 is the small variable size and the screen refresh rate, which compared with the highest-end models. For customers on a budget, though, the one makes a good choice, offering professional-quality for just a few dollars more than entry-level models. Both Monitor Design and C72 specifications describe the CyberVision line in Canada.

**Daytek Vista V17**

Suggested retail price: \$315

- Screen type: DiamondPro super-fine
- Dot pitch: 20 mm
- The monitor is capable of 60 Hz refresh rate at 1,000x768 and 60 Hz at 1,000x1,000.
- There was some minor flicker at the higher resolution, but nothing noticeable at 1,000x768.
- Screen focus was excellent at 1,000x768. Though it was a bit less clear at 1,000x1,000, it was still very good.
- No noticeable flicker at 1,000x768, although some flicker at 1,000x1,000.
- Regulation of the screen was excellent in both horizontal and vertical.
- The OSD is easy to use, and the controls are well placed.



Although many are familiar with Daytek's more budget-conscious line, the company makes a number of higher-end models, including the Vista V17. The screen's pixel reduction makes it a good choice for multimedia work, and the price makes it an excellent choice of a without huge amounts of cash. No matter what your line, this monitor fits the bill.

**Ecom EC770M**

Suggested retail price: \$225

- Screen type: shadow mask
- Dot pitch: 27 mm
- The panel is a 17-inch, but should not be the reality of users is that it's a good and precise monitor.
- At 1,000x1,000, the screen monitor is capable of an 80 Hz refresh rate and 60 Hz at 1,000x768.

- Flicker was minimal at lower resolution, but became more noticeable at 1,000x1,000.
- Screen focus was quite good at 1,000x768, although with some flicker. The focus quality dropped noticeably at 1,000x1,000.
- Minor flicker was visible at 1,000x1,000, but only noticeable at 1,000x1,000.
- Minor juddering was noticed during screen refresh rate testing.
- Although the OSD controls take a lot of time to get used to, the controls are well placed and the monitor was easy to use.



Although the refresh rate is a bit lower and the picture quality is top of the higher-end models in the roundup, the monitor does have a lot of quality in the mid-range. Even in the lower resolutions, the monitor does quite well, offering reasonable performance for the price. It's not going to win the competition to perform high-end tests, but the lowest price point, too. It's not the best choice more than a few years. (Thanks to Monitor Design for the review monitor.)

**Empac Azura T170+**

Suggested retail price: \$225

- Screen type: shadow mask
- Dot pitch: 30 mm
- The panel is a 17-inch, but should not be the reality of users is that it's a good and precise monitor.
- At 1,000x1,000, the screen monitor is capable of an 80 Hz refresh rate and 60 Hz at 1,000x768.

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- The OSD controls are well labeled and easy to use.
- Along with the other OSD controls, there are "on screen" controls which include a menu up on the screen after a pre-programmed interval to remind the user to take a break. This is a nice feature for educational!
- Screen focus was rated at 1,280x1,024 but was reduced at lower resolutions.
- Corner focus was very good at 1,024x768, but focus became more of a general problem at high

- or resolutions, with slightly off-center settings throughout the screen.
- A lot of noise was detected at 1,280x1,024 and even at higher resolutions. This could be annoying for people doing serious graphics.
- After jumping was detected during regular testing, after switching between full screen applications, some jumping was also noted.

The Asus 100, distributed by Emper, seems a good entry-level model for the budget-conscious user.



conscious user. The corner dot pitch makes it less suitable for higher-end work, but users who keep it at a resolution of 1,024x768 or lower should find the monitor works well, without costing a bundle. For users who worry that they spend too much time in front of the screen, the "eye care" control is a very nice bonus too.

## Resol 701P

Suggested retail price \$269

- Screen type: phosphor-coat.
- Dot pitch: 0.28 mm. Although it is closer than some of the other displays tested this month, it remains high-quality minimalist overall.
- The monitor achieved 100 Hz at 1,024x768 and 75 Hz at 1,280x1,024.
- The video input showed 1,024x1,024 but a screen resolution of 768x1,024.
- A lot of noise was at 1,280x1,024 but was negligible at lower resolutions.



- Corner focus was excellent at both resolutions tested.
- Regulation was excellent.
- The controls for the OSD are located on a side-mounted panel. The four directional buttons make the OSD generally easy to use, although getting the best of the "Eye Care" and "Focus" buttons may take some getting used to.

Resol has a full range of monitors for both business and home use. The 700P, from its 17-inch line, provides a good display with great OSD control. While the 26-inch dot pitch may not be quite the best for the latest demanding users, its reasonable cost, along with quiet steady work at higher resolutions, for what it provides in terms of picture quality, this price is quite nice too. (Thanks to PowerByte: <http://www.powerbyte.com>, for the production review.)

## IBM P72



- Suggested retail price \$269
- Screen type: phosphor-coated glass.
- Dot pitch: 0.28 mm.
- The P72 is capable of 1,024x1,024 when run at 1,280x1,024 and 75 Hz at 1,280x1,024.
- Picture quality was excellent with this monitor.

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Processor	450MHz Pentium II	450MHz Pentium II	450MHz Pentium II	450MHz Pentium II	450MHz Pentium II	450MHz Pentium II	450MHz Pentium II	450MHz Pentium II	450MHz Pentium II	450MHz Pentium II	450MHz Pentium II	450MHz Pentium II	450MHz Pentium II
Memory	64MB	64MB	64MB	64MB	64MB	64MB	64MB	64MB	64MB	64MB	64MB	64MB	64MB
Hard Drive	2.1GB	2.1GB	2.1GB	2.1GB	2.1GB	2.1GB	2.1GB	2.1GB	2.1GB	2.1GB	2.1GB	2.1GB	2.1GB
Optical Drive	48x CD-ROM	48x CD-ROM	48x CD-ROM	48x CD-ROM	48x CD-ROM	48x CD-ROM	48x CD-ROM	48x CD-ROM	48x CD-ROM	48x CD-ROM	48x CD-ROM	48x CD-ROM	48x CD-ROM
Video	15" TFT LCD	15" TFT LCD	15" TFT LCD	15" TFT LCD	15" TFT LCD	15" TFT LCD	15" TFT LCD	15" TFT LCD	15" TFT LCD	15" TFT LCD	15" TFT LCD	15" TFT LCD	15" TFT LCD
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Connectivity	Modem, LAN, USB	Modem, LAN, USB	Modem, LAN, USB	Modem, LAN, USB	Modem, LAN, USB	Modem, LAN, USB	Modem, LAN, USB	Modem, LAN, USB	Modem, LAN, USB	Modem, LAN, USB	Modem, LAN, USB	Modem, LAN, USB	Modem, LAN, USB
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## In brief

### Letter classes types

**MAILTRAIL** (Info: 0181-611 0011) tool and control their postal job types for will be integrated into a new version of Lotus Development Corp's Notes 3.0 groupware software.

The agreement between the two companies will see personalized letters sent and information control into the desktop of up to 10 million Lotus Notes users. It will be directly used against the model to control messages in July Notes users will access a "personal profile" through the start screen welcome page. They will be processed with customized areas, results, inside tools and personal information.

"This agreement represents a milestone in Lotus' global distribution strategy," said Bob Davis, Lotus' senior executive officer. "Expanding our reach to millions of Notes users is a significant milestone step in our global strategy, and will represent an important step in our global strategy."

Letter, <http://www.lotus.com>  
Info: 0181-611 0011

**Illustrate for cybersecurity pros**  
**WASHINGTON** D.C. (Info: 4-0000) the demand for the provision of cybersecurity has developed a new technology service for information technology (IT) security professionals that designed to be a cyber security service and more.

**Information Security Defense Inc. (InfoSec)** has launched "Illustrate," a free-based Web site that will provide cybersecurity pros with development in the security area from various and experts involved in the area, along with other data from multiple wire services. Cybersecurity, however, a heavily regulated industry, however, the site is designed to be a cyber security service and more.

"It's not good enough to have just an official position on the Web," says James Adams, chief executive officer of InfoSec. "You must provide other forms of contact to make the site successful."

Adams and InfoSec is trying to differentiate itself from other services on the Web by providing a more meaningful for cybersecurity professionals. "This is a global issue from where cyber security professionals can communicate with their peers," Adams said. "They have access to large amounts of data that is from both public sources and otherwise."

Partnership will also have been from the Information Systems Security Association (ISSA), a world-wide security management service firm.

The full annual list for Partnership is 01111111 for individuals 01111111 for full-time personnel support, 01111111 for full-time students and faculty and 01111111 for ISSA members.

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AUGUST 1999

## Burn a CD-R in under nine minutes

LaCie's CDR-R800S 8x20x a speedy, dependable storage solution

By Graham Barnard

**L**aCie has strengthened its reputation over the days as a laser-cassette drive supplier built in the late '80s (a period in which Apple's then-flagging business led to LaCie being acquired by Quantum and subsequently rebranded by building high-quality products). This drive is a good example of the LaCie image for success. Based on a high-speed burn rate, the drive is the fastest CD-R drive ever tested in PCP Lab. And, thanks to its large 2 MB buffer, it's also one of the most reliable, too.

As opposed to older unreliable CD drives that all too well, the lack of a sufficiently large buffer can lead to a disk burning phenomenon known as a "buffer underrun," which is typically caused by an interruption during the data writing process. Buffer underruns can corrupt existing data during the interruption (e.g., burn a buffer) the main operation, but the drive becomes part another expensive cost. While this can still

happen with this low-voltage, high-speed drive, the LaCie drive's hardware design and real-time CD-writing software on its option, the very best on the market will minimize the problem.

### CD-R800S Details

Price: \$149 (street)  
Size: 120 mm (4.75 in.)  
Weight: 1.1 lb (0.5 kg)  
Interface: SCSI-2, SCSI-3, SCSI-4, SCSI-5, SCSI-6, SCSI-7, SCSI-8, SCSI-9, SCSI-10, SCSI-11, SCSI-12, SCSI-13, SCSI-14, SCSI-15, SCSI-16, SCSI-17, SCSI-18, SCSI-19, SCSI-20, SCSI-21, SCSI-22, SCSI-23, SCSI-24, SCSI-25, SCSI-26, SCSI-27, SCSI-28, SCSI-29, SCSI-30, SCSI-31, SCSI-32, SCSI-33, SCSI-34, SCSI-35, SCSI-36, SCSI-37, SCSI-38, SCSI-39, SCSI-40, SCSI-41, SCSI-42, SCSI-43, SCSI-44, SCSI-45, SCSI-46, SCSI-47, SCSI-48, SCSI-49, SCSI-50, SCSI-51, SCSI-52, SCSI-53, SCSI-54, SCSI-55, SCSI-56, SCSI-57, SCSI-58, SCSI-59, SCSI-60, SCSI-61, SCSI-62, SCSI-63, SCSI-64, SCSI-65, SCSI-66, SCSI-67, SCSI-68, SCSI-69, SCSI-70, SCSI-71, SCSI-72, SCSI-73, SCSI-74, SCSI-75, SCSI-76, SCSI-77, SCSI-78, SCSI-79, SCSI-80, SCSI-81, SCSI-82, SCSI-83, SCSI-84, SCSI-85, SCSI-86, SCSI-87, SCSI-88, SCSI-89, SCSI-90, SCSI-91, SCSI-92, SCSI-93, SCSI-94, SCSI-95, SCSI-96, SCSI-97, SCSI-98, SCSI-99, SCSI-100, SCSI-101, SCSI-102, SCSI-103, SCSI-104, SCSI-105, SCSI-106, SCSI-107, SCSI-108, SCSI-109, SCSI-110, 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# If your office was on the beach, would you get any work done?

If you were using the Sceptre  
Soundx 6500, the new wave in  
desktop replacement computers,  
and the BT18, an 18" LCD flat panel  
monitor, the answer would be yes!

Pictured: An 18" Sceptre LCD display,  
driven by a Soundx 6500—notebook  
computer. The Soundx 6500 is powered by  
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## Entice! targets mid-size firms' e-comm needs

Recommender Multivariate Software has  
tailored its expertise in selective outcom-



Entice! Pictus module.

tion, content management, and e-commerce  
tools into software development into a new  
class-one product for midsize companies.

Multivariate says the new package,  
Entice!, is designed to help mid-size (500 to  
5,000 employees) business customers create  
online sales and marketing tools, including  
email campaigns, lead qualification, mailing  
lists to prepare sales channel and communi-  
cation and information sharing with sales  
distribution channels.

In a demonstration at VCP's Vancouver  
office, Multivariate president Boris Kabanov  
demonstrated the software before the teaching  
process when a potential customer visits a  
Web site created via and powered by Entice!  
By testing the basic a status check,  
online responses to queries, it assesses the  
type and quality of the lead, directing the  
information to the appropriate staff, and

alerting them when calls need to be made, or  
closed out, according to the company's rules  
and marketing strategy.

Multivariate says Entice! also gives users  
control to the customers, allowing them to  
visit the Web site at their own convenience  
and determine when, how and if they want  
to be contacted by a salesperson.

One of the notable features of Entice!  
according to Kabanov, is its power to easily  
add and marketing rules, which often fall  
to communications, resulting in lost opportuni-  
ties. He says Entice! is reporting features pro-  
vide both departments with instant and his-  
torical views of the progress of their strate-  
gies. They can also track individual sales in  
progress and evaluate the probability of suc-  
cess.

While the 10-module package is complex  
and general, Multivariate says it is also flexi-  
ble, stable, and easy to maintain, adaptable  
tools, and integrate with back office products  
and platforms.

The price of the Entice! package is in the  
five-figure range (depending on the number  
of users), which puts it out of the hands of  
small companies but seems affordable in  
light of a Forrester Research report on the  
cost of first-generation "e-commerce" sites  
for mid-size businesses. The report estimated  
50 percent of small size companies just  
basic information about a business, its prod-  
ucts and perform an email contact (cost  
cost over \$20,000,000 to develop).

—Gregory Johnson

Multivariate Software, 30 888 337 3330

<http://www.multivariate.com>

### Runs a CD-R in under nine minutes Continued from page 48

for the range 0-75 and the last device is  
"terminated." It is a snap to configure. The  
software, meanwhile, includes a utility to  
set permissions on or off, as required.

And what is termination in this context?  
Well, imagine that the chain of SCSI cables  
connecting the various devices to your com-  
puter has signal that comes down the wire  
from device to device. At the last station of  
the SCSI chain is one electrically terminated  
with a resistor, the signal hits the last device  
and, in essence, bounces back, causing con-  
flict in the SCSI chain. This can lead to  
devices not working properly. Adding a ter-  
mination—either a clip-on, terminator plug or  
via a switch, in this drive—absorbs the signal  
when it reaches the end of the chain, solv-  
ing the problem.

#### Suggested Uses

Windows 95, 98 and NT are supported by the  
included Adaptec software. Presumably, we've  
had better success with the Easy CD-Creator  
package than with the WinCD (Ultimate) suite  
applications. In our tests, little or no additional  
setup problems about 10 percent of the time.  
Writing data with Easy CD-Creator, on the  
other hand, was very close to 100 percent  
reliable.

Although Team is still our favorite CD  
recording package on the Macintosh, we  
would not be in better position here at about  
10 percent, as well. In fact, our test

machines is 240 MB/s. Power Mac, the very  
first, we tried while evaluating this drive  
failed its verification process they being with  
our Easy CD-Creator. In comparison, we've only had  
one error in 30 drives recorded with Easy CD-  
Creator running under Windows 98, and  
even then the error didn't cause any data  
loss.

We tested the drive successfully under  
Windows 2000 beta 1, too. Although the  
Easy CD-Creator package doesn't officially  
support Windows 2000, Adaptec has worked  
an unannounced beta version for this CD (see  
<http://beta.adaptec.com/cd-creator-beta01>).

#### Limitations and cost per megabyte

As mentioned earlier, the drive does not sup-  
port CD-RW media. However, CD-R does not  
sell less than half the price of the changed  
CD-RW discs we could find (\$24 per disc at  
Circuit City) at \$11 per disc (CD-R disc, the  
big thing up is not so new—just more  
adaptable file system).

At present, prices for media, CD-R espe-  
cially a nearly solid storage solution for those  
who need to exchange files with other users,  
or who want to minimize ongoing costs.

#### Conclusion

This drive should be on your short list if you  
are shopping for a speedy and reliable CD  
recorder. While the associated building of  
problems based on the Adaptec 24000 (CD-  
RW), Power Mac 4400 and the CD-RW  
recorders.







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2) **ISDN dial-up & Business Basic** web hosting - \$75.00 per month

3) **dedicated ISDN - Business basic** web hosting - \$300 / mth (includes 24 TEL. Monthly charges & router. NO TEL set-up charge applied)

4) **T1 - Business Advanced or Co-located Server** starting @ \$1000.00 per month\*\* (2) (prices call for details)

\*Unlimited time offer.

\*\* (1) prices vary by telephone exchange

\*\* (2) prices vary by telephone exchange and hosting service.

taxes not included.

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- no primitive restrictions
- free software
- free tech support
- win 3.1, 95/98/NT, MacOS - OK
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# QuickTime 4.0 final release

Apple gives media player a new interface, limited MP3 support

By Suzanne Rowlett

It's what appears to be further evidence of Apple's internal feud for it is the Mac OS X, after company released the final version of an ambitious upgrade to its QuickTime multimedia architecture for Mac and Windows PCs in early June.

## QuickTime 4.0

Free App

Mac OS X 10.0.4 (Mac OS X 10.0.4)

For: Mac OS X 10.0.4 (Mac OS X 10.0.4)  
Price: \$224.95 (Free) (Free download)

In April, Apple initially released QuickTime 4.0 as a "public beta"—a sneak peek at the software's new features, which included the ability to play MP3 audio files. That was followed by an update, posted May 14 on Apple's Web site, that added support for the fairly popular Internet 3 video compression/decoding format as a "codec." With it, users viewing QuickTime 3.0 Pro in beta are able to create and playback Internet 3-encoded video files. The QuickTime 4.0 release in June upgraded beta users to the final release of the updated beta version of QuickTime 4.0, you can update to the

final version by launching the Updater, which is located in the QuickTime folder.

Unfortunately, in beta or final form, QuickTime 4.0 is unable to play MP3 audio broadcasts such as those captured by PC users via DirectShow. QuickTime 4.0 also lacks support for MP3 files recorded with a recently developed technique called variable bit rate (VBR) encoding. Since it can't play some audio files, even if they are playable on the same system with Microsoft's Media Player, Apple, unlike Microsoft's player, QuickTime 4.0 doesn't attempt to remove the offending code from the file—it just failed with a blank white screen. When confronted with the same file, the file must play successfully without the offending compression from file makers' own code repositories. An auto-update function is provided in QuickTime 4.0 that can check with an Apple server to see if there is a new version of the software or a pending code available. Hopefully, Apple will begin to supply these missing pieces.

Other new additions in QuickTime 4.0 include support for Macintosh flash animations and so-called "streaming video" playback—streaming. It can begin to play a large file before it has finished downloading. Apple made the announcement at the WWF '04 show in Las Vegas, where it also released a long-awaited video editing package called

Final Cut Pro for iMacGPP. The new QuickTime release is available for free download at <http://apple.com/quicktime>. It is an Internet-connected format that downloads a small installer that subsequently downloads and installs various optional components. If you prefer a QuickTime 4.0 full installer is also available on an Apple FTP site at <http://apple.com/quicktime>.

We've now had a chance to run through many of its QuickTime 4.0 new features. Here's what's new and improved:

- Support for flash animations.
- Limited support for MP3 audio (VBR only).
- Better full-screen playback performance (Pro version only).
- New Movie Player (now named as QuickTime Player).
- Streaming support.

## Streaming support

QuickTime 4.0 supports open the limited streaming capabilities of version 3.0, with support for both live and streaming format by using a movie with "live" and true compressed streaming with support for RTSP and RTMP. Although Apple does not support streaming from servers running Mac OS, third parties have already announced and started Mac OS-based streaming servers such

as Server's Broadcast (a iMacGPP product for streaming live QuickTime 4.0 video from a Power Mac G5 running the Mac OS X) and others. A few media publishing tool for QuickTime streaming, it also worth checking out.

We've seen a demonstration in which Mac OS X streamed audio-quality video to 50 users using QuickTime 4.0. However, some reports suggest that streaming video quality can be poor—no compressed audio, along prospective solutions carefully. Apple chief executive Steve Jobs, has characterized RealNetwork's RealPlayer and RealAudio streaming technologies as QuickTime's major competition. WWF also plans to use QuickTime 4.0 and its successor Windows Media Technologies 9.0—namely in beta—in that category.

We noted a somewhat awkward comment that when using the Pro version of QuickTime 4.0, it is impossible to view a movie on a Web site in full-screen mode until after it has been completely downloaded, viewed and saved, then it opened in iTunes. More than that, those familiar with Mac OS X's recent Media Player update know this doesn't have to be the case.

Although the new QuickTime Player looks neat, critics agree of its limited

Continued on page 182

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# Aiwa's Bolt a solid Travan tape drive

By Bruce Townsend

If you read *Hardware Computer magazine*, it's hard to miss Aiwa's ad for its new Bolt tape drive. It's full capabilities list is as breezy as a tropical breeze. "60 GBs, 100 MB/sec," (American facts, of course). The first time I saw it, it nearly knocked me out of my chair.

## Bolt Drive

Model: Bolt 400  
<http://www.aiwa.com/usa>  
 System requirements: Windows 95/NT  
 Estimated street price: \$299

All of Aiwa's Bolt material—ads, press kits, Web site—leap out at you in the same

manner. If there were a million Bolt ads on page 1, it would probably become Star Trek's most annoying, "It's big, it's hot, it's BOLT!" in this issue's parlance.



knowledge, the external, SCSI-enabled, post-Bolt's sleekest appearance reflects its

type. It weighs a solid metal casing and has a size slot of almost 3 kg (about 6.5 lbs) that I

never let

in a piece of consumer electronic equipment in a long time. This may well be the first tape drive that can also be used for weight training.

As to the Bolt's list is a little instruction manual, a full CD-ROM tape (which, since the Bolt advertising is highly positive in 10 GB capacity, and Seagate's heavy Backup Plus volume).

The drive was easy to install. I only had to plug it into the parallel port and install the software. It was quick and painless, which was good because the manual, which is disappointingly incomplete in places, would not have been much help. In the section "Inserting and Ejecting Tapes," for example, try to find out how to insert a tape.)

A minor quibble here: the included tape, despite the Aiwa 400 post number, is actually a standard Travan tape—a TBS-1. In fact, the Bolt can use Travan 7 and TBS tapes, though they're rated at 3.3 GB per tape. However, in order to get 6.6 GB out of a tape, you first have to initialize it using the Bolt's proprietary format.

While formatting the tape is a time-consuming task, I discovered that the Bolt's designers might have taken its heavy-duty design and

built a little less in 10 bolts and bolts apart, and the surrounding disk when I put the tape in the slot was anything but a boring operation. The drive has almost mind-bogglingly more than 100,000 data blocks in the space of my PC's fan and after a while the spin-disk whining, which could have been 10 or 20 dB away, gave me a headache.

Still, the sound didn't impinge on performance. The external Bolt drive is used to have a maximum backup speed of 10 MB per minute under the best of circumstances. But it, there is no file compression or other data streamlining the CPU. After doing up Backup Plus, I immediately backed up my hard drive's master data partition. 17 GB made up of over 30,000 files. The whole thing took an hour and 40 minutes, which would not be about 15 to 20 MB per minute. I had left the compression on in most people would, but that most of my data files are compressed files, I only get a 10% compression ratio. While the Bolt was a 400 speed drive by random-access media standards, I could have backed the same amount of data onto three CD-Rs in less time. It was certainly quick for a parallel port tape drive. I also had verification checked off, but later into our dinner that verifying doubles the total backup time. Formatting the data was a bit quicker, running at about 25 MB per minute.

The actual segment for the drive's tape backup appears fine. The time backup speed, compared to random-access devices, is helped by the low media cost (about 0.4 cents per megabyte). However, the Bolt takes the sting out of the speed issue, and the time cost of the drive coupled with the ease of installation, makes the Bolt Aiwa's entry into the market the most of tape backup just got easier and cheaper. ☐

Bruce Townsend ([bruce@townsend.com](mailto:bruce@townsend.com)) is hooked up on tape and CD.

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## It's going to be all write!

Mitsumi's CD burner handles CD-R, CD-RW

By Dean Cavallaro

In the DVD Age, we often take the ready-to-burn CD burner for granted. A CD burner that's 1 GB in size, it isn't available for now, and many new games are so large that installing them from CD format requires disc swapping. So why would you want to look back? Because you may need to burn your own CDs.

The time of being able to burn your own discs at home still holds a lot of appeal. Whether it's a CD-RW or a CD-R, or even a CD-R, people still get excited about the idea.

Mitsumi, which is well known in the world of this technology, has been making CD-R drives for some time but now a Mitsumi



Mitsumi CD-R 4000  
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 From Mitsumi  
<http://www.mitsumi.com>  
 Minimum system requirements: 20 MB RAM, 750MB  
 Partitioned PC Windows 95/NT  
 Estimated street price: \$150

Both CD-R (prepress disc assembly) and CD-RW (rewritable disc) technologies have been around for a few years, but

drive for burning to our first CD-R, and is now offering CD-RW drives. The rewritable disc

Continued on page 116







# QuickTime 4.0 final release

Continued from page 39

don't seem to have been very well thought out. For example, a playhead "ruler" appeared to be located inside Windows, but it only shows a generic waveform icon for the audio files. I still much prefer to see the names of the files. Another annoyance: the QuickTime (Movie) doesn't remember the volume control settings you selected in your last session when you restarted. We also found that although improved, the 15.625 kHz QuickTime Player (the full-screen playback) is inferior to that provided by Microsoft's Real Media Player.

## Flash animation support

QuickTime 4.0 provides both Mac and Windows systems with direct support for Macromedia's Flash animation format. Flash is an efficient format that combines support for vector graphics, bitmapped images and audio. In fact, it's already supported in Microsoft's latest operating systems.

QuickTime 4.0 makes no substantial improvements to the quality of its internal software-rendered graphics. With the playback, which, as we noted in our review of QuickTime 3.8, remains inferior to that of Microsoft's Real Media Center. With the Windows and Macintosh QuickTime 4.0, however, it is better than we saw with all, in fact, reports on <http://www.apple.com> seemed to confirm our suspicion about the fact that video output quality of the Mac version was actually worse. Fortunately, a multi-screen update posted July 3 provided an updated second image.

There is a Mac-only feature in QuickTime 4.0 that is a bit of an Apple egg. As some of previous QuickTime releases are moved, running on Windows still and pointing to the QuickTime extension provided an old support of developers but it's still there, along with several new file-system options—accompanied by the new extensions.

As mentioned above, Apple has provided support for the latest 3.2 color that is one of the most popular and efficient colors on the PC. For compressing digital video files, in our tests (5 minutes) it's a bit more comparable to that of MPEG-2, but with better playback quality on real-time machines. QuickTime supports playback of MPEG-1 files that can provide MPEG-2 support at this time.

Because QuickTime does not support the MPEG-2 color, Apple created on a PC using the or other supported color display only a few screens on a Mac. There is currently no solution for this, other than converting the file on a PC to a format the Mac can read.

Although the Intel II video is available only to users running QuickTime 3.8 or earlier, other video releases and some of the popular video can be obtained by installing Macintosh Internet Explorer 4.5. QuickTime 4.0 also supports the other Macintosh Video 4.4 color, which is also available for downloading from the QuickTime Web site on the new QuickTime 3.8 file. With these updates, you get the new video system extensions that allow some video format movies to play at 100 percent.

QuickTime's new compression is discussed with the Apple-Source code, a summary to the example Chapter code. With related video degradation, the compression reduced a sample movie

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# Hands on Office 2000

TCP looks at the final release of Microsoft's long-awaited suite

1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 2680, 26

**A**fter an long-awaited review, Microsoft officially launched Office 2000 on early June. I looked at the Professional Edition of the suite and found it to be stable with some very powerful features for productivity to the user.

The Features Edition tested included FrontPage and PhotoDraw 2000, which are both excellent programs.

The company claims system upgrades for the main harbor channel can cut Office 97—both then again, 14 MB of RAM won't be a terribly handy memory upgrade for Office 97, either. I tested Office 1995 on a variety of systems equipped with 40 MB to 140 MB of RAM, and CPU's ranging from a 166 MHz Pentium to a string of Golden and Pentium II models—and even a dual-CPU 400 MHz monster sporting Windows 95000. In all, all with standard-size monitors. Performance, however, ran poor on a system with only 32 MB of memory (the only's low price, is a month's warranty).



status. If all of your systems is working, then  
congratulations, you're in!

The program's *Join* command (press **Join** on the menu bar) inserts a line at the first, and you'll probably spend some time using the *Undo* command (or **Control-Z** keyboard equivalent) to cancel it to "help." For example, when typing my last name at the end of this section,

AutoComplete automatically added "Am  
[...]" thinking that I wanted to type in  
company news. Fortunately, it seems to  
have learned that when I type "Glasgow"  
it goes up a level by considering my first  
last name. Indicating that, by creating links  
in text, AutoComplete that text using my  
first continuing in (yes, you can also search  
this feature).

The program, which includes a set of regular-expression templates and a file browser, allows you to open OpenOffice documents via the file browser or Internet Explorer. It also allows the opening of Web documents in the application in which they were created, or in other external applications on your system (for example, on the system, I used Microsoft Word in HTML could be opened in Word FrontPage or Netscape). Highlighting, document and changing files opens the document in the application that was used to create it. In Microsoft Word, this is a context menu option in Open Web or mail. Windows Explorer can open documents with a right-click.

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**Abstract 2.2 Normal is major progression**  
(Continued from page 174)

Roundabout: Rather than QP, it uses the GFA software library (officially linked to precompiled glib core and GPP to pre-compiled glib core).

Conceptually, UNICIT and RSE are similar, but UNICIT is designed to work with a wider range of window managers. It is currently best integrated with a manager called *Redshiftment*, which provides exactly the most looking desktop you can find. Red Hat is a variant UNICIT is the default GUI. Red Hat 5.1 and Red Hat 5.0 offer 3.0 in an option. It is readily available for Linux.

Combined with shell language agnostic libraries there are wrappers for programming in C/C++ for several programming languages, though the main language is C. In general, the code apps that come with CShell have a somewhat more cluttered appearance than the ones that come with Bash, but overall CShell is faster and more stable. CShell is only just reaching maturity while Bash has been in general use for several decades.

Build environments will be instrumental in debugging Linux in the desktop or build test and even in Linux. With **ELKS** or **GRUB** as an enhancement Linux will begin obtaining more than previously speculated Linux (as complicated) Every thing will be a whole generation of Linux and users will do not know, or care, how to use the traditional Unix system. (2)

Share Efficient (predefined.com) is a Toronto-based IT services, installation and server sales company. Small firms of home owners, back issues of this journal are available online. Back up of your files. Inquired about? This journal, and the company's technology center, I have for several years been for about 10 years. (http://www.shareefficient.com)

## Bring on the Linux apps

**W**here there is no denying that Microsoft Windows and Macintosh have earned a number of office-style applications, it has strong evidence that open-source platforms like Linux and BSD have, in fact, to achieve spreading systems just for the same reason, namely of their openness to modification.

There are 1,000 full-time staff members at our regional office centers, plus a "big-name" brand presence available in-house. All office locations are Class "A" documents, convenient, vibrant, (re)exchange documents easily, always on-line. The latest applications from here or the hub of Windows products. What's the best time to call you can download and buy items on-line. Microsoft. All in, here, since 1975.



MacMillan's next program is to be

It's a little harder to appreciate it, but you need processing, translation, generation, and delivery with fully automating software, as well as HTML, encoding, email, and a group reader. But the standard for HTML is a long way from "personal edition" a standard to be known even if it was not included in your home distribution list, you can download it from the company Web site <http://www.microsoft.com>.

Coast Group has released a new "personal use" edition of *WorldProfs II* for Linux. This downloadable edition of *Coast Linux* uses *WinWord* and *WinMail* and is available, with many Linux distributions. By May, 1999, Coast had registered more than six million users of *WorldProfs II*. The new edition, with *WorldCook* and *WinMail*, is the first of the new series to offer applications to support for Linux. It also features *Personal Edition* of *WorldProfs II* with additional graphics and links, available for *WIN95*. By Coast is seeking all persons to make other users to Linux.

While products like this may seem to be an environmental step on EOE, you could take a step further. "We'd like to plant trees down at your workstation, and they would know how many trees to plant the program and what to do."

[illegible]





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# Weaving your own Web site: Part 47

## An in-depth look at Cascading Style Sheets: Part 6

By Keith Schwartz Roberts

In this article, we continue with our alphabetical tour of Cascading Style Sheets (CSS) attributes by looking at the **HEIGHT**, **LETTER-SPACING**, and **LINE-HEIGHT** properties.

### The **HEIGHT** property

The **HEIGHT** property is similar to the less-famous **CSS** property and is used to define an element's (usually an image) to this desired vertical length on a Web page. It can take one of three different properties: a unit of measurement value, a percentage value, and **auto**, which sets the element to its default size. It has a related property **MIN-HEIGHT**, which does the same thing but is applied to horizontal length.

The **HEIGHT** property is designed for use with most text elements like **phrases** or **sentences**. It will not appropriately allow the display of text on a Web page. In order to change the height of text on a Web page, there are several other **CSS** properties that relate to the job such as **FONT-HEIGHT** or **LINE-HEIGHT**.

**HEIGHT** can take a specific measurement value, which sets the height of the image to the desired value. So you can set an image to any size you want using standard **CSS** measurement values like **centimeters**, **inches**,

**pixels** or **mm**. **CSS** measurement values will be explained in detail in a future article. For example, you can set a value like the following to an image file:

```
img{height:height: 1.5cm;
width:width: 300px;}
```

**HEIGHT** can also take a percentage value. The percentage value specifies the height of the image in relation to the overall height of the browser window. So if you wanted to have an image size to half the height of the browser window, you'd write the following code:

```
img{height:height: 50%;
width:width: 50%;}
```

**HEIGHT** is fully supported by Internet Explorer, but not at all in Netscape Navigator. Because of this, it cannot be recommended for widespread use at this time.

### The **LETTER-SPACING** property

The **LETTER-SPACING** property does exactly what it describes: It sets spacing between individual letters in the text that appears on a Web page. The **LETTER-SPACING** property

has two values: the default value **normal**, or a specific measurement value.

When used effectively, **LETTER-SPACING** enables Web authors to spread out text across a Web page. This technique is commonly used in forms (space needs across a single line of text, usually to fully justify it in other words, to spread the text "fully" across the line). This does not fully translate to the Web where it is difficult to know exactly where a specific word will appear on-screen, so even if you can't really use it effectively for this purpose, you can use the **LETTER-SPACING** property for some eye-catching displays.

You look for the **LETTER-SPACING** property in the examples. It is great for making your headers stand out, or for emphasizing particular words or phrases in your text. When you apply a unit of measurement to the **LETTER-SPACING** property, it is applied to the space between the letters. This means you can't not to get carried away by using large values with this property. The following code example shows a good and a bad example in how to use the **LETTER-SPACING** property.

```
h1{letter-spacing: 0.5em;
width:width: 400px;}
```

**LETTER-SPACING** property is used to space out text.

When used in moderation, the **LETTER-SPACING** property helps emphasize things the text is looking at words in a line of text. It does not build up well when trying to justify a line of text. In it is impossible to know the exact width of the browser window your visitors will be using or when you set a constant value to space out the individual letters. Because values like the second example above can make the text visually unreadable. The this particular property appears and does not go unnoticed when setting the value for the distance between the letters.

Again, this is another case of a property being fully supported by the latest version of Internet Explorer (version 4.0 and up), but not at all within the latest version of Netscape Navigator (version 4.0). If you plan to use this value, make sure you do it so that no information is lost when a user reads your page using Netscape Navigator.

### The **LINE-HEIGHT** property

The **LINE-HEIGHT** property enables Web authors to set the distance between lines of text on a Web page. Using this property, you can create effects like "double-spacing" on

Continued on page 118

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# Going, going, gone!

## 10 Web sites for auction nuts

By Keith Schangli Roberts

Auction fever has hit the Web big time. Whether you are looking for a hard-to-find gem for the classic Buckle, Armani, gold coins, Wildwood china dolls, antique furniture or just about anything else imaginable, you will most likely find it in one of the hundreds of online auction houses that have sprung up on the Web. This article takes a quick look at eight of the most popular. Do I have 30? Yes! I have 30 auction Web sites. Any more on 18? Going, going, gone! This auction Web site sold the guy selling for the newspaper.

1. **Bay** • The grand-daddy of all online



auction houses. They began life as a place for the depressed collector to trade in

spidily grow and expanded into other venues, and now sells just about everything under the sun. If you are selling or looking to buy something, this is probably the best place you should check out. Just remember all of the prices at auction are in American dollars.

<http://www.ebay.com>

2. **Bi.com** • Bid.com joined as a company that auctioned off computer and electronic equipment exclusively. Though it has expanded into other areas (such as jewelry and office products), Bi.com is still best known as the place to check out for computer gear. Many auctioners start at \$1, and there is a section devoted to Canadian buyers.

<http://www.bi.com>

3. **Borgoon** • This site is an interesting



twist on online auctions because it targets select items across North America, including Toronto, Vancouver, Montreal, Calgary, Halifax and other major Canadian cities. Local auction items are listed in Canadian dollars and you can get e-mail alerts, can or cannot like things. While not auction-related, they also offer a Postlode service to help you find a lost item or a stolen item.

<http://www.borgoon.com>

4. **Amazon.com** • Well, yes, isn't this a bookstore? Well, yes, but Amazon.com recently got into online auctions, and is making a big push to try to take business away from the likes of eBay. It doesn't have as many items for sale as eBay, but Amazon.com is worth keeping an eye on. At the moment, you can pick up some cool figurine items that tend to sell for more on eBay.

<http://www.amazon.com>

5. **Antique Canada** • This site is an oldie as a directory listing major auction houses specializing in antiques across Canada, and has just recently decided to take the plunge into online auctions for auctioneers. Not much yet at the time of writing, but only open companies were its Glass, Art, Furniture and China; but the site is worth bookmarking and checking out as it grows.

<http://www.antique-canada.com>

6. **NamasteOnline** • If you are a coin collector, this specialty site is well worth a look. A number of major dealers across North America have joined efforts to offer many of their best coins at this site. You'll find everything from ancient Greek coins to the latest Canadian commemorative coins here.

<http://www.namaste.com>

7. **Outlet** • This is another place worth checking out if you are in the market for computer equipment. Outlet offers items such as computers, printers, networking equipment and more at "wholesale prices." There are also check to buy or similar items for sale. Sports equipment and travel deals are also offered at this site.

<http://www.outlet.com>

8. **Royal Auctions** • No one can ever likely to find the Queen or Prince Charles here, but Royal Auctions has slowly been carving a niche for itself as a good place for people looking for jewelry, collectibles, antiques and some art auctions. While it has been around less than a year, it is beginning to develop a strong good base in these areas.

<http://www.royalauctions.com>

Continued on page 122

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# Find and play MP3 files

By Scott Swendberg

**M**Y MP3 music library is in the form of the music, so using the Internet to find MP3 files can be a challenge. MP3 files can be large, and you can't store them all on your hard drive. You can download and store up to 100 MB of music, but you can't store them all on your hard drive. You can download and store up to 100 MB of music, but you can't store them all on your hard drive.

This month, two Internet programs designed to play files in MP3 and other formats, propose that search the Internet for music files, and propose that run your own CD and music files into MP3 format.



**MP3**

**MP3**

Version 1.10  
Release date: May 22, 1999  
File size: 1,023 KB  
License: Shareware  
Cost: \$29.95  
Home page: <http://www.mp3.com>  
Also available: Windows 95 version

MP3 is a placeholder for MP3 audio files. If you want to register and catalog MP3 files, then MP3 will be the program for you. It can store MP3 files into a database, play them, add comments to tracks, filter up to 44 categories, register tracks into categories, select categories for playing, shuffle tracks in random or sequential mode, and much more.

**MP3**

**MP3**

Version 1.04 beta 001  
Release date: June 12, 1999  
File size: 1,023 KB  
License: Shareware  
Cost: \$29  
Installation period: Limited function until registered  
Home page: <http://www.mp3.com>  
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MP3 is a search engine that scans MP3 files and MP3 files on the Internet and compares an index of MP3, MP3, MP3 and other music files as well as a list of MP3 files and music files on the Internet. MP3 is a search engine that scans MP3 files and MP3 files on the Internet and compares an index of MP3, MP3, MP3 and other music files as well as a list of MP3 files and music files on the Internet.

**MP3**

**MP3**

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Release date: April 19, 1999  
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Also available: Windows 95 version  
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MP3 is revolutionizing the way music is distributed. MP3 will help you find existing MP3 files on the Web. It's also a way to communicate with other Internet users around the world. With MP3, you can chat or send files to people who are located far from the same location.

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**CD/Spectra Pro**

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If you can't use a home stereo system, you can use this simple and powerful MP3CD player. CD/Spectra Pro has features similar to those of regular CD players and offers a graphical interface to MP3 files. Internet database access, graphical capabilities, a gallery and a "random" function. It can support MP3 files from Internet databases which can save you from having to enter the names of artists and titles of songs on your CDs.

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## Modem includes telephone features

**Abstract**

While the standard dimensions of PBT-82 are 5 (total in.) MultiDisk Systems, Inc. put together the first model, Inc. answering machine and full-duplex speakerphone that operates both home and office. This means you can take advantage of some of the features of this device regardless of whether it's your personal or business use.

Message Server extension V.20 modules  
from Mailfish Systems, Inc.  
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Tel: 650-365-0577 <http://www.mailfish.com>  
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The medium is the new standard. With the new configuration, while the the compressed and stored up to 10 pages in memory before you have to access and download the film. Likewise, the digital (page-free) answering machine will store up to 10 minutes of bits before creating a message.

Perhaps the least popular feature here will be the full-duplex speakerphone, which operators will bet popular: that the convenience of a long-distance call over the Internet (half-duplex means you can talk and listen simultaneously) is a regular telephony as opposed to one-directional like a walkie-talkie.

equipped with a similar device. Internet long-distance calling has been around for a few years now but has failed to capture a significant market largely due to the poor quality of the connections. As a regular speakerphone however, the Iliwang device works and sounds as good as any other.

Additional telephone features include caller ID, an integrated speaker for the answering machine and voicemail, a pay like, and remote message access at will. A regular answering machine. All the features can be accessed through an illuminated keypad to the MessagePad itself as you can, for example, listen to your messages without having to use the computer.

The software bundle **HRP's FloorPlan**, is a simple variation on the standard management, *i.e.*, the management software that anyone who has used a word-processor knows in the past will be familiar with, including multiple windows, multiple file folders and other options. One nice "twist" feature here is that you actually get a printed, 84-page manual in addition to the floppy and CD-ROM office user guides. The *FloorPlan* software requires about a half of hard disk

The MouseWare connects through a serial port, which means you'll need an additional serial port if those on your PC are already tied up by other devices. Also, the required serial cable is not included with this relatively expensive machine. The documenta-

tion implies that the cable has been constructed so that you can purchase the exact configuration required for your computer. The "You Supply" method of the manual partially made a shielded RS-232C serial cable with a male DB-25 connector on one end and a connector to match your computer's serial port on the other end. You also need supply a male-to-male stereo patch cord with an plug if you want to use the headphones through your sound card. If there additional features are mentioned according to the

But I wasn't able to find them, which means hapless shoppers who haven't read the write-up are guaranteed an irritating ordeal. (We're on the case for "Parade.")

*Parasponoxanthus parviflorus* itself, the show-flower is relatively easy to set up and maintain and yields consistently well over that's done. Where the price is somewhat inconsistent at this point, it can perhaps be attributed by the fact that all the specimens of this species appear to be of very high quality, and therefore a little more expensive.

### ATM card plug-in for PCs

credit: © 1998, IBM—IBM Systems has developed a plug-in technology to use non-volatile ASICs (Application Specific Integrated Circuits) to use their ASICs to handle data marshaling between two IBM Mainframes. If it is known, it is a plug-in device that simply takes care of data marshaling between two copy share systems. Once plugged in, the main address needs to change to some other address, and the device reads the data directly into/out. Like an ATM and local networks, (IBM is still in the process of developing).

The company says it is the driver in the field of its payment method used can be used by digital financial institutions for a variety of online services, including shopping and travel booking. By requiring the card to be present at the drive at locations from ATMs, pharmacies, and banks, it has ensured that all are effectively PCI-compliant.

1. I did believe, commonly floating agreements with several banks in the 1980s, that I would provide the IBM Machine loan to their customers. The company that I did not know much about, but they are launching several pilot projects as they start to develop a commercial bank in India for the Chennai business zone.

ATM cards can be used in2 bank, non-bank ATM and regular retail/credit cards



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# Linux for Newbies

## Part 1: Introduction

By Gene Williams

Welcome to the Linux! In the past, following operating systems on the planet Linux is everywhere these days isn't being used by businesses, schools, studios, writers, scientists, Web masters, programmers, graphic designers, and Dell's store. A free operating system that has grown from its humble roots to development in major corporations, Linux now has an estimated 40 million users worldwide. If you've been tempted to try out Linux for yourself, stop now, this article is the first of TCP's new "Linux for Newbies" series, and is designed to help you get Linux up and running.

The series will lead you through writing up and operating Linux on an Intel or Pentium-compatible PC. Along the way you'll learn enough basic Linux commands to administer your Linux system. To follow along with this article, you'll need a PC you can work on Linux, the minimum system for character-based Linux requires a 386 with 4 MB RAM and a CD-ROM drive, a 386 with 16 MB RAM and a CD-ROM drive.

To use Linux consistently with a graphical user interface (GUI), you'll need at least 32 MB RAM and a fast processor, preferably a Pentium-level chip. Linux can even work with DOS/Windows, or Windows NT/NTFS, up to the latest one (now, but planning ahead, you'll need a 386 to 486 MB RAM partition for a reasonably well-applied graphical environment installation, and 1 GB or 1 GB if you want the X-Windows environment, with desktop icons and drop-down menus, you may want to install a second drive just to experiment with Linux.

### Is Linux for me?

But first, a disclaimer: Linux is not for everyone. Linux can be challenging, frustrating, and a bit too technical for some users. When you start using Linux, you are embarking on a major study; if patience and a willingness to learn new things are not among your special qualities, you should stick with Windows and Macintosh. If you enjoy computing challenges, however, Linux offers the biggest bang for the buck—and the most fun.

To all you need to participate is an available PC with enough free disk space, a Linux installation disk, and an attitude. Oh, yes—a good connection to the Internet will really help. The rest of obtaining a Linux CD will involve between \$1.99 plus shipping to \$30 or more. For this article, I'll assume, assuming the \$1.99 price.

### What is Linux?

Linux was a name tribute; it could be a Volkswagen Beetle, a small Microsoft console, a C++-style machine, a 16-bit Macintosh, or an old program, all-in-one. However, depending on how you use it, there is no operating system anywhere that runs much of its memory.

More specifically, Linux is a free Unix-compatible multitasking multitask operating system that evolved from the kernel part of a number of independent, group work between-based projects.

The kernel, or engine, of the operating

system was created by Russian graduate student, Linus Torvalds, at the University of Helsinki in 1991. Torvalds created the Linux kernel because he liked Unix, but couldn't afford a commercial version. He drew upon a band of developers from around the world and they have been working on the Linux kernel ever since, under Torvalds' supervision. Critically important parts of the rest of the operating system came from the Real Software Foundation (RSF), Perot, the Athena Project, and various other projects. Linux combines the successful, mature features of Unix with support for modern hardware such as 32-bit drives, video printers, sound cards, modem cards, MIDI/MIDI and CD writers. One of the distinguishing features of Linux is the amount of choice given to its users. There are at least a dozen GUI choices, ranging from simple interfaces in the stock new KDE and GNOME environments. Linux is highly valued for its speed and stability—its fast and steady nature.

Linux, which is named after Torvalds, is currently pronounced in the U.S. as the



the penguin. The central Linux Web site is Linux Online.

### Choosing a distribution

Although Linux is free, you can download all the parts and put it together yourself. It's more convenient to purchase a ready-made distribution or CD. Each "distro" has a slightly different flavor and features. Once you're up and running, there's all sorts of stuff to do, but each distribution has different features, maintenance and upgrade procedures.

They also vary in the amount, nature, and manner of the free software they include. Some distributions include "proprietary" versions of commercial software, such as Microsoft's file Linux. They also differ with over 1,000 free programs.

The major ones are Red Hat Linux, Gentoo OpenLinux, SUSE Linux, Slackware Linux, and Debian GNU/Linux. These distros are frequently sold as computer stores and are frequently included on CDs with various tools. If Linux is not suited to your local store, you can order the distros directly from the companies or the Web, or have online distros (such as Choptopics) at Linux Systems Ltd.

Which distro should you pick? The best guideline is that if you have a hard time with experienced users, use the same distro as they are using. Getting help will be much easier that way.

If you're new to Linux, here are some rough guidelines about specific distros:

- **Red Hat Linux** is the most widely used distro. It's well supported and there are several third-party books devoted to it. The current release is 4.0. Red Hat is a very good choice overall and is frequently the pick of professionals setting up Internet servers. It also makes a fine personal installation. Installation is straightforward and easy.

The full, commercial distro version includes the full, commercial distro version of the GNU, Glibc, and other software. It's the only distro that's 4.0 to illustrate this series.

- **Gentoo OpenLinux** is also well supported and the latest release, 3.2, promises to be challenging. Red Hat as the leading distro for better users. Gentoo includes a lightweight version of Windows Magic that helps you install Linux over an existing Windows 95/98 machine. Furthermore, you can join the entire Linux installation directly from Windows. If you want the other way into Linux, this is it. The 3.2 release includes NetBSD/3.2, the Linux 2.2 kernel, and the Linux 2.2 kernel. It even sets up Windows for you as a bonus. Very slick and impressive.

- **SUSE Linux** is Germany's the top choice in Europe and has been rapidly growing since its North America release. It's a beautifully engineered product and I highly recommend the current release, SUSE 4.1. This release includes NetBSD/3.2, the Linux 2.2 kernel, and KDE, GNOME, the Linux 2.2 kernel, and more. Installing "proprietary" versions of several commercial software programs is the best of the distro. The CD-ROM and also has the most comprehensive manual. SUSE users tend to be happy campers.

- **Slackware Linux** is a popular distro characterized by a simple, straightforward, no-nonsense setup. It's not the ideal of the distro and the one that feels like the most like traditional Unix. Its clear, easy, and simple approach to administration makes it a very attractive distro to install and use. Slackware maintains a good Web site and has always offered high quality. Its price point is much lower than it has to be—only a few dollars, or even less. The latest release, 4.0, includes KDE and the Linux 2.2 kernel.

- **Debian GNU/Linux**, the only non-commercial distribution, is a sophisticated distro favored by many Linux users. It is maintained by a group of volunteers on the Internet, in the spirit of the Free Software Foundation. The Debian release is very carefully crafted, with the best update/upgrades procedure of all the distros. The latest 2.1 release does not include KDE, GNOME, or the Linux 2.2 kernel, though distros can be added. Unfortunately, Debian GNU/Linux is a demand to the people. It's the most challenging Linux to install for inexperienced users as I'm not recommending it to newbies at this time. Debian has been selected by Core Corp. for its forthcoming Core Desktop Linux. Gentoo has received a small amount of recognition, we'll avoid this release.

### Getting ready

In the next installation, we'll look at the various kinds of installing Linux. If you want to follow along step by step, get a copy of the Red Hat 4.0 or 4.1 for Windows Choptopics. You can skip the cost of shipping if you purchase multiple copies with a friend or two. If you'd prefer a version that includes a printed manual and video software, pick up a boxed set

directly from Red Hat or from your favorite computer shop. ☐

Gene Williams (gwilliams@compuserve.com) is a Toronto-based IT manager, teacher, and writer who operates a small firm of Linux services. Each issue of this series will contain an article on how to use Linux in your environment.

## Linux contacts

**Linux online**  
Linux Online: <http://www.linux.org>  
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# Spreadsheet audit

By Helen Bradley

Experts estimate that nearly 60 per cent of spreadsheets contain basic or critical errors. This means that the documents we use every day to

control budgets, estimate costs, file and calculate salaries and other financial data are more likely than not to contain inaccuracies.

This month I'll look at the types of errors worksheets can contain and some of the

tools and design philosophies you can use to help ensure that your worksheets are error free.

## Types of errors

There are three basic types of errors that

worksheets can contain. Some are easier than others to locate and fix.

### Spelling errors

Spelling errors are mistakes in applying the language of the program you are using. For example, if you use the formula `=OFFSET(B5,10,1)` you'll get a syntax error because the key word you're using in the formula is wrong. It should be `=OFFSET(B5,10,1,1)` instead. In auditing as they are, we are easy to fool and its tricky because the program usually checks them for you. For example, by typing `=OFFSET(B5)` into a cell in Excel and you'll see the cell displays `#NAME?` indicating that Excel doesn't recognize the text in the formula.

### Run-time errors

A run-time error is only detected when you actually run the program. For example, if you have a worksheet that contains a formula that performs a division based on the contents of two other cells, it will result in a run-time error if the device cell at any time contains a zero. This may only happen in extremely rare or under circumstances that may be difficult to predict when you are designing the worksheet. Run-time errors are harder to find and fix than spelling errors.

### Logic errors

Logic errors are the hardest of errors to locate and fix because there will generally not be anything visibly wrong with the worksheet. The formulae in the worksheet are likely to work just fine and to return values but the problem is that they aren't doing what you want them to do. For example, if you want to calculate the selling price of an object based on a 10 percent markup and you use the formula `=B5*(1+10%)` assuming that the cost price is in cell B5, then you'll get a result—but it won't be the one you want. The correct formula is `=B5*(1.1)`.

### Identifying errors

One method of tracking errors in worksheets is by making rough checks. You may have done these at school when you began complex calculations by first making a rough calculation of what the answer should be. You then made a more accurate calculation and noted to you if the answer you got was about what you thought you would get. One example: a mark up of 10 percent on a general costing of \$275 is a little more than 10 percent, so say it's about \$300. A rough estimate would make the sale price of the garment around \$355 (it's actually \$301.25). If you made this calculation using the logic error covered above, the result would be a selling price of \$177.50, which is well off the figure calculated in the rough check figure and would indicate something was wrong with the formula.

Rough checks are "quick and dirty" calculations—they are meant to give you a rough answer that you can compare to the "exact" answer "anyway".

Not all rough checks are as easy to make as the one I just used but you can often check complex formulae by using simple

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figures and checking that the results are what you expect, if the steps, figures, words that there is a good chance most complex work will fail.

Using known data is another way of checking complex formulas. For example, if you know that an amount of \$2 invested for 7 years at an interest rate of 2% results in a final amount of \$4, then you can use this data to check an investment formula. If you use those known inputs in the formula and get the result you expect then it is likely that the formula is correct.

Employing constant data results in perhaps the easiest way to track errors. For example, if you could make and load loans to them on so devices you can eliminate some errors by placing each of the two rates in a cell by itself and refer to the cell in the formula rather than placing the rate in the formula. If you place 7.5 percent in a cell, let your single calculation be \$2.00, an interest using the formula  $\text{amount} \times (1 + \text{rate})^{\text{years}}$  than eliminate 12.5%. Comments based inside formulas are used to find and to check for accuracy or after if the situation changes in the future. If you place constant values in a cell by themselves and label them, then your data is easy to find, check and update.

#### Documentation

Often the problems with spreadsheets happen not when they are first created but later when something needs to be changed or updated. It can be difficult enough to remember how and why you designed a worksheet and what assumptions you made for its use, but these difficulties are compounded when someone else has to work on it. You can make the task easier for yourself and others if you document your work.

Worksheets can now contain a number of sheets so it's easy to add a sheet to every worksheet to document it. You should add your name, the date the worksheet was created, and list any assumptions the worksheet is based on. If there are known problems with it, list these and describe the formulas you're used and the data that is used. This information can save you hours of frustration. The time to document a project is when you are working on it—it's a tool two few people have and everyone should develop.

#### Handling ranges

Compare the formula  $\text{=D2D2}$  and  $\text{=SUM(B2:B5)}$ . To understand the first formula you would need to look at cells B2 and C2 and work out the data they contain. You can then return to the formula and return to the conclusion that it calculates the sum of people who are tall figures. If you look at the second formula you can make that assumption from the wording of the calculation.

Using "range" names like these make your formulas easier to read and understand. In  $\text{=SUM(Tall)}$ , you can make any cell in a worksheet by choosing the cell and selecting from: Name, Define (this type is a name for the cell and cell C2), in Lotus 1-2-3 select Range, Name, type a name for the range and click OK, in Quattro Pro use Insert, Name, Cells, type the name, select cell and select OK. Once you have named a cell you can (and should) use the name instead of the cell reference in all your formulas.

You can paste a lot of names and the ranges they refer to into a worksheet by moving your mouse over to the work.

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# Fuji's 2.3 million pixels

By Greene Bennett

In February, FujiFilm announced its MX2-2700, the first digital camera to offer a resolution of more than two million pixels per image. Interestingly, although the company's press release at that time said the camera supported universal serial bus (USB) as a method for transferring images to a personal computer, it never said that this feature is supported. The web includes a video LCD capable of displaying up to nine images at a time. The display has a 1.5x magnification feature for examining the images more closely.

## MX2-2700

Form film

Estimated price: \$1295

Price: High resolution video from a relatively small pixel sensor. Low battery. Video LCD capable of displaying up to nine images at a time. The display has a 1.5x magnification feature for examining the images more closely.

The camera records images on a removable SmartMedia card that can be upgraded.

Costing, going, gone!

Continued from page 117

5. **Live to Play** — An action site showed



squarely at people looking for sports equipment. You can get everything from

to the 12 kilobit version for storing a maximum of 192 photos. The MX2-2700 uses a rechargeable lithium-ion battery, which charges up a



good for up to 250 shots when the LCD is turned off, and 80 shots when it is on.

In our tests, an unformatted personal drive the camera is a PC running Windows ran the included serial cable and ThinkPad component transfer and sharing software. The package also includes Adobe Photoshop software, which provides numerous image-editing capabilities.

Images taken at the camera's highest resolution, 2.3 megapixels, take quite a

while to transfer to a PC. Via the included serial cable, it took more than 90 seconds to send a single image, although thumbnails of the images appear in the computer's image preview windows much more quickly. We did not test the USB option, but presumably, it would provide similar performance to the 11 Mbps serial transfer of standard serial cables.

For sending pictures to a Mac, you can use the included fire-wire cable—unless your Mac is one of the newer models that doesn't include a serial port. They also make an optional FireWire disk adapter that accepts the tiny SmartMedia storage cards and makes them appear to a computer as if they are a standard floppy disk. Although this adapter supports read-only functionality on a Mac, it doesn't support (UJAT-120 type) drives with capacities greater than 1.4 MB—this offer-

ingly cuts into, and new G3 comes out of the picture, even if they use an external FireWire SuperDrive. Windows users can use the floppy adapter with full read/write compatibility, albeit with a 4-MB slow only.

Image quality from the MX2-2700 was good, although images are degraded by a fair amount of noise. This was most noticeable in a 300 percent crop of one image, which revealed a moderate amount of random speckling built into the camera's capture circuitry.

The camera provides four special effects in addition to a number of resolution options. You can convert standard color images to apply to black-and-white, as well as add white to colored "raw files" highlights (which tend to look pretty cheap). There's also an option to output images directly as a grayscale such as Fujifilm's 15-15-15.

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# Tedious lectures mar music tutor

By Joan Allen-Brown

The original Making Music was a lively program containing games that taught young children aspects of making music without weighing them down with

the technical aspects of composition.

Making Music made attempts to take the interactive bug into the more technical mechanics of composition. This follow-up CD-ROM (again between relatively simple games that subtly try to teach rhythm,

form and notation, tempo and scale, and composition, and direct instruction and demonstration of these concepts.

The lectures are among the dullest we've seen. Rather than presenting one or two simple concepts with some interactive exam-

ples, the lectures ramble on and on. I had to take a deep breath and try to remember all that had been done at one when I finished some of these sections. The basic concept for the program is good. And for children actually learning some of the same concepts in school, it would be well worth the investment to enhance such learning.

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What the program lacks in programming sophistication and the interactive bells and whistles offered by the better educational CD-ROMs—then leaves for children, for example. The latter take children through play and strategy. They offer suggestions while the child is playing and continuously adapt to the child's skill level. You do not need to babysit the player or explain the program—something they parents appreciate. Making Music does have a help screen and "about information," but even that there are in the form of lectures with a few highlights appearing on the screen.

When this program does show promise is as a tool to help children experiment with their own compositions and a variety of instruments, even using multiple instruments simultaneously. They have a choice, for example, of taking a note down with a whistle, tenor and a new bell or using their own drums, with each playing a unique set of notes. They write the music for each instrument.

The chamber music section teaches musical notation while children develop their own compositions using more traditional instruments, such as trumpet, violin, flute, and piano.

Kids can change, move or delete specified notes or sections of their compositions. They may play back one instrument at a time or all four simultaneously. Similarly, they may listen a section of notes and play just that part.

Making Music is used for children eight years of age and older. If a child is on the lower end of this age scale but is already taking music lessons, the program could be a useful supplement tool.

Improve the company that developed Making Music Music, even to recommend to be more patient and less pedantic with children. This is the company that taught children how to play chess and program in BASIC—and made it fun—so it is possible.

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# Handbook delves into Director

By Jonathan Sawyer

Orality has a reputation for producing definitive references on a number of software products (some would argue a book not hard to pull off in three days of electronic-only research), and documentation that by including its text can become the last word on facts, numbers, lists and snippets of code. Orality uses the same style in its latest book on Macromedia Director—a multimedia creation program.

Author Bruce Spatznik's treatment of Director 7 includes extensive comparisons, lists of shortcuts of those Director's scripting language, which leads to a striking resemblance to Visual Basic, plus many other topics. One of the great strengths for using specific aspects of the program (for example, the use of Lingo macros) that, which are Director's equivalents of Adobe's graphics or Visual Basic's Access).

The book has numerous illustrations of the Director interface and its various design tools. In addition, limited to present with Web site information to demonstrate, Director and Shockwave sample pages and other Director resources. In short, this book lives up to the Orality reputation for being comprehensive.

**Director is a Handbook**  
Author: Bruce Spatznik  
Publisher: Orality  
Price: \$24.95



Written in this an illustrated guide to using Director in the style of a manual for beginners or the by Design notes from Microsoft Press, but in a revised handbook with the structure and power of Director 6.2 to 7.2, you can see why Macromedia's most quality design notes copies for everyone on the Director quality assurance team. (2)

Jonathan Sawyer's full profile of [www.bbc.ca](http://www.bbc.ca) is here.

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# Japanese pop culture meets the Internet

By Jeff Jones

When I visited the British Computer Museum in 1993, I had the chance to explore the museum's new computer lab—a fascinating, constantly updated program that made computers fun, easy available to Britain's (and my) kids.

At the time with many other U.S., Canadian and Western European sites, the youth of Britain (as in the last 50 years) came to connect at a rate of dozens of national, religious and ethnic groups from all parts of the world. What did these "global" institutions of info want to do with computers?

Some were conducting science experiments, building simple robots, or learning desktop publishing. And, however, were creating or using the info about themselves: pop culture. They enjoyed, although images from U.S. pop culture (TV shows, fashion, cartoons, rock music, and action films) were well represented, American pop loves appeared to be, literally, a lonely internet to these computer labs.

Indeed, the kids of that era were based on Japanese sources, ranging from video games, through animated cartoons, to manga, as Japanese culture was called.

When had they learned about this stuff? I asked them, and their answers always led back to computer bulletin board systems (BBS), the precursor to today's internet.

Something was happening here. Since then, I've tried to follow the evolution of Japanese pop culture into the Web, a trend that is mostly invisible to non-Japanese. Canadian and U.S. television, publishing, and studying increasingly, however, it is hard to understand modern North American youth culture, it seems you also have to understand Japanese youth culture, and in so doing, you have to understand how the Internet over the last few decades.

## From Godzilla to Cool Japan

As a childless fan of Japanese Godzilla monster films, I had been somewhat aware of the increasing presence of a Japanese aesthetic in my favorite mainstream genre of action fiction and fantasy in the 1970s and '80s. However, a number of factors seemed to limit the movement of commercial Japanese media into the Western culture zone.

First, it seemed that Japanese entertainment formats and content were simply too "different" to easily appeal to mass audiences outside Japan. It seemed as if Japanese game shows, romances and sports, for instance, could not be translated for Western audiences.

Also, there was often a combination of racism and fringe sexuality and that made post-war Japanese entertainment unattractive to the big U.S. media conglomerates and distribution channels.

Yet there was much in Japanese popular culture that fit the emerging cyberculture of the 1990s. The integration of human and machine in movie adventures such as *Moblie Suit Gundam*, *Apprentice*, and *Armored*, the enormous international value of Japanese videogame hits such as Nintendo's *Super Mario*, the internet factor of video *Idol*, *Anime* (and more recently, *AKB48*) *Delivery* (now all seemed to concentrate more to reinforcement).

I began to reconsider increasing numbers of North American teens and young adults—many eventually choosing careers in the growing information technology industries—where personal development were made up from a malleability constructed media kit. They were commonly involved more with all of the following elements, such as otherwise music, science fiction and cyberpunk books and movies, Asian action films on late film, and a mix of Japanese music, including video games, manga and Japanese television known as anime or Japanimation. Although often they think, anime stars such as *Yuki* *Mori* offered no horse, racing, adventures role model for young girls.

## Pop in the New Japan

### Music is booming

Part of the power of modern Japanese media comes from the fact that it is based on American mass entertainment forms. Modern Japan was created by a fusion that never had the "Western" is member in mind. After a century of trying to become a major power by emulating European science, education and military, Japan was literally blown down to its knees by the U.S. After three, most major cities were nearly leveled—two of them by Atomic.

After internationally acknowledging to the Allies in 1945 Japan was occupied by the U.S. Army. What followed was a crash course in American culture. However, the Japanese reacted to American commercial mass media as they had responded to the influx of Buddhism and Shintoist Chinese culture: they adapted it into a uniquely Japanese form. American influences ranging from literary romance to westerns, to the anime factor of *Warrior* *Shogun* actor Robert I. Kikuchi, morphed into a peculiarly Japanese aesthetic that still resonates with some Western audiences.



## The Journal of Unproductive Media

### Revised Bulletin Boarding 101

In the above ground, interconnected group of North America in 1993, Japanese pop culture's place is still spotty. The culture is needed in the big exception, where *Idol's* *PlayStation* site in Japan (over 30 million visits in million contacts, respectively), and English language website of Japanese game culture are other hotspots. Therefore, Japanese pop culture, in other words, is a small player in most media and media. Japanese animation video and DVDs are sometimes available in a small circle of local media stores. Comic book shops carry a few "anime" manga titles and to the more established sites, such as *Japan*.

On the borderless Internet, however, Japanese culture is huge. In the online world, an entertainment phenomenon can be massive without moving a huge dollar sign.

In a recent search using the *AltVista* search engine (<http://www.altavista.com>), I typed in a variety of keywords to see how many "finds" concerned themselves with various concepts, and found some interesting patterns that gave a first-hand idea of how pervasive Japanese pop culture is on the Web. "Idol" is, of course, the girl, with 31,553,925 Web pages associated in some way with that word, followed fairly closely by "anime" with 10,144,400 "Goth" and "Gothic" with 6,344,850 Web pages. "Gothic" and "Gothic" had 4,440,000 and 4,044,720 mentions, respectively.

But TV shows such as *Buffy the Vampire Slayer*, *The X-Files*, *Star Trek* and the movie *Star Trek* phenomenon had substantial but much lower Web page counts of 243,210, 109,437, 344,195 and 214,095, respectively. By comparison, "anime" showed up in 1,741,126 Web sites, and "anime" in 1,638,493. An astounding Web presence for a so-called Japanese phenomenon. The anime adventure series *Dragonball* is related to in 381,407 Web pages, more than *Star Trek* or any

of the U.S. television series mentioned above, in a final comparison. With *Dragonball's* *hobby* *Manga* has an astonishingly healthy 31,474 Web sites containing his name. This might be hard to understand, considering the global reach of the *Idol*, and one factor is the *Dragonball's* *anime* *anime* *anime*—including *anime*—who are so-recognized that even on an amateur Web site.

In fact, the phenomenon of Japanese anime and manga presenting the Web is perhaps the perfect model for how the internet is becoming the medium for a new global culture that does not depend on traditional corporate media. As to the case of the 1993 media format, if the publishers of commercial mass media in North America can't figure out how to package and sell Japanese culture, then it will spread—until almost no commercial corporate direction—in the Web. This "information wants to be free" method of digital publishing has to succeed, though.

## The dark side

### Land of the rising Otaku

There's an underbelly or at least dubious side to Japanese popular culture, which is well known in Japan, and is becoming a concern here. Many young Japanese men refer to themselves as *otaku*, meaning no attention for of particular video games, or pretty young pop stars, or animated cartoon series.

Increasingly, Japanese women are reacting against the social pressure to marry those very old young men, preferring the single life, and leaving the men to their computer collecting and consuming. Much of the music, manga and video games collected by *otaku* is more and often violent—and a side effect of more than one million hits. This is a disturbing evidence that some of the Japanese culture spreading through cyber-space is far from harmless fun. For better and for worse, the Internet has opened a glowing window into a Japanese history world that contradicts, instructs and seduces the young of the wired world. □















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